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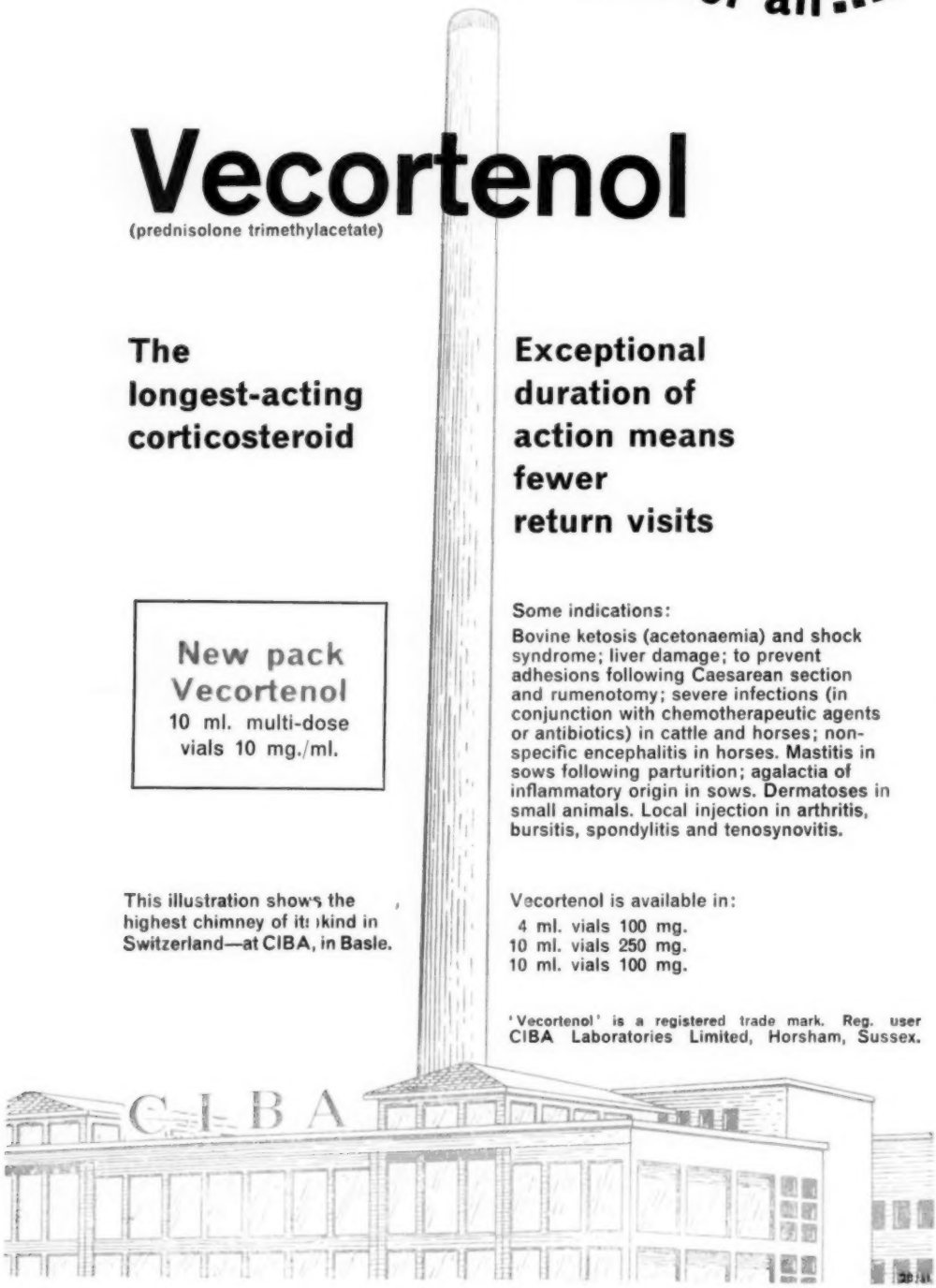

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A Case of Hypertrophic Pulmonary Osteoarthropathy in a Mare*

BY

J. R. HOLMES

Department of Veterinary Medicine, University of Bristol

Introduction

THIS case is presented for two main reasons; firstly because of the relative rarity of reports of this condition in the horse, and secondly because observations on the circumstances under which the disease occurs may help to elucidate the aetiology in both domestic animals and in man.

Case Report

Subject: Brown Hunter mare 11 years old. Weight 8½ cwt.

History: Advice was first sought by the owner on May 5th, 1958 because of swellings on the limbs. Condition rapidly deteriorated. On July 7th a painful swelling was observed on the forehead over the frontal bones and hard swellings appeared on both gaskins and the right forearm.

The mare was admitted to the University of Bristol Veterinary School on July 15th.

Symptoms: Condition was poor and progressively deteriorated despite a good appetite. Although the limb swellings were painful on pressure the animal was not lame. The digits did not appear to be affected. Blood leucocytes showed an increase in total numbers to 14,650 per cmm. with a slight rise in neutrophiles. X-ray examination of the limb swellings showed extensive new bone formation and osteophytosis suggestive of hypertrophic pulmonary osteoarthropathy. Because of this a pulmonary lesion was suspected. Auscultation of the chest revealed adventitious sounds in a small area on the left side. An electrocardiogram showed no cardiac abnormality. An intradermal tuberculin test was negative.

The mare progressively lost weight and was destroyed on August 7th, 3 months after first appearance of symptoms.

Post-mortem examination: The only abnormality apart from the limb bone changes was a fracture about the middle of the 7th rib on the left side. The rib was split throughout the greater part of its length. The underlying parietal pleura was adherent to the adjacent diaphragmatic lobe of the left lung in a band about 2 inches wide over the site of the fracture (Fig. 1). The heart and lungs were normal. Joints were not affected.

Radiological Changes

The 7th rib on the left side was fractured about its middle with longitudinal splitting of the bone into 2 almost equal halves. No adjacent bruising or muscle haemorrhage was apparent on *post mortem* thus suggesting that the lesion was not recent, but there was negligible callus formation.

The thickening over the forehead observed during life proved to be soft tissue reaction and no radiological change was noted in the frontal bones.

The main bony changes were apparent in the radii and tibiae, and to a lesser extent in the metacarpals and metatarsals. The humeri and femora were normal on inspection and there were no radiological changes in any of the digital bones.

The Radii: Here the lesions were not bilaterally symmetrical. On the left radius there was only a small area of periosteal new bone about one inch in diameter in the midshaft on the anterior aspect of the bone. This area was only slightly raised above the normal compacta. The right radius, however, showed extensive new bone formation in the diaphysis with early osteophytosis outside the new periosteal bone case extending up to 1.8 cm. from the original bone shaft. These changes, therefore, corresponded with the observed thickening of the right forearm.

The Tibiae: The most marked changes were evident in these bones. Both tibiae showed very extensive thickening throughout their length with osteophytosis extending into the dense parosseous connective tissue resulting in considerable distortion of the bone contours. The osteophytes extended up to 3.5 cm. from the original compacta (Figs. 2, 3 and 4).

Metacarpals: There was slight roughening of the

* Presented at the Case Reporting Session, B.V.A. Congress, Glasgow, August 29th, 1960.

periosteum throughout the diaphyses but this was not very extensive.

Metatarsals: As with the metacarpals, there was new bone formation characterised by slight irregularity of the periosteal surface of the compacta throughout the length of the shafts but no gross thickening or osteophyte formation.

Distribution of the lesions in the tibiae: Radiological examination of slices of these bones in transverse section indicated the sites of greatest periosteal proliferation. As observed previously in the dog (Holmes & Price, 1958), the sites of most extensive osteophyte formation appeared to be those associated with membranous or tendinous attachments to the bone or those areas free from muscular attachment. Thus, in the upper third of the tibiae most marked new bone formation occurred on the anterior border and external surface. The internal surface was only slightly affected because it forms the point of attachment for the gracilis muscle, whilst the tibialis anterior and peroneus tertius run over the external surface. In the lower third periosteal new bone was most prominent on the anterior border and internal surface. At this level the internal surface is virtually subcutaneous (Fig. 4).

Discussion

Hypertrophic pulmonary osteoarthropathy (H.P.O.A), also known as Marie's Disease because Bamberger and Marie were the first to describe the condition in man in 1890, has been reported in a variety of domestic animals, but probably most commonly in the dog.

In the horse Cotchin reviewed the literature up to 1944 and also described a case associated with tuberculosis. Since then no further reports have been found and 2 factors are probably responsible for this: namely, the marked reduction in the incidence of tuberculosis, combined with a fall in the horse population. Most previous cases in the horse seem to have been associated with tuberculosis usually involving lungs and related lymph glands.

Reports of cases in the dog are still frequent but the precipitating factors have changed during the last 20 years. Whereas most reported cases accompanied tuberculosis, to-day the great majority show pulmonary neoplasia.

Occasional cases have been described in both the dog and in man in which the bone changes were not associated with chest lesions. Examples in man include chronic anaemia, hepatic cirrhosis and carcinoma of the stomach.

In this horse the chest lesion was confined to the thoracic wall and underlying pleura, and the lung substance was macroscopically normal. There was no history of trauma and negligible reaction around the site, so that the injury was unsuspected until *post-mortem* examination. That such a localised chest lesion involving pleural adhesions affecting only a small area of the diaphragmatic lobe of one lung should be associated with such profound skeletal change is extremely interesting. In man it is noteworthy that fibroma of the visceral pleura, although a rare tumour, is the condition most constantly associated with osteoarthropathy (Price-Thomas & Drew, 1953).

Osteophytosis is not a feature of H.P.O.A. in the human subject, whereas it is a common finding in the dog, the osteophytes extending a considerable distance from the typical new periosteal bone case into the surrounding connective tissue. Osteophytosis was also a feature in this animal, again probably representing a more advanced form of the syndrome associated with sclerotic age changes in the parosseous connective tissues as suggested previously in the dog (Holmes & Price, 1958).

In the dog lesions particularly occur on the distal parts of the limbs, from the radii and tibiae downwards to the terminal phalanges. In the equine case reported by Cotchin (1944) exostoses were present particularly on the metacarpals, metatarsals and phalanges, the tibia and also on the vertebrae and mandible.

In this case the most severe reaction involved the tibiae and right radius. There was evidence of early periosteal reaction in the metatarsals and metacarpals and it is likely that they would later have developed more obvious lesions and probably also the frontal and parietal bones would have become involved.

Three suggestions regarding the aetiology of this disease have been reviewed by Semple and McCluskie (1955). Briefly they are: that there is an indirect effect on the endocrine balance; that when a tumour is concerned it secretes a specific chemical substance; or that there is an autonomic vascular reflex involved as a result of effects on pulmonary circulation. The latter would seem to be the most likely explanation.

Cudkowicz and Armstrong (1953a,b) demonstrated precapillary broncho-pulmonary anastomoses in the lungs of patients with finger clubbing and osteoarthropathy. They suggested that an autonomic pulmonary-systemic vascular reflex may be responsible. Examination of affected lungs showed the pulmonary arteries to be occluded proximal to the site of the anastomoses presumably as a result of a lowering of pulmonary artery pressure or an inadequate pulmonary arterial blood flow. The anastomoses between the bronchial and pulmonary arteries result in the proximal bronchial arteries becoming grossly enlarged and the distal vessels become narrower as a result of reduced function. Intrapulmonary nerves have only a bronchial blood supply (Larsell & Dow, 1933). It is possible, therefore, that in chest diseases with broncho-pulmonary anastomoses the ischaemic nerve fibres in the lung reflexly influence the formation of arterio-venous anastomoses in the limbs, a feature reported by Lovell (1950). Blood flow through clubbed fingers has been shown to be greater than normal (Wilson, 1952) but the anastomoses by-pass blood away from the capillary bed and increased rate of flow reduces the time available for the exchange of tissue nutrients.

The bone reaction in H.P.O.A., characterised by extensive periosteal proliferation, is a typical reaction of long bone periosteum to inflammatory, traumatic or neoplastic lesions.

(*Concluded at foot of page opposite*)

J. R. HOLMES—A CASE OF HYPERTROPHIC PULMONARY OSTEOARTHROPATHY IN A MARE

FIG. 1. Diaphragmatic lobe of left lung *in situ* showing pleural adhesion over fractured 7th rib (part of the adhesions have been broken down).

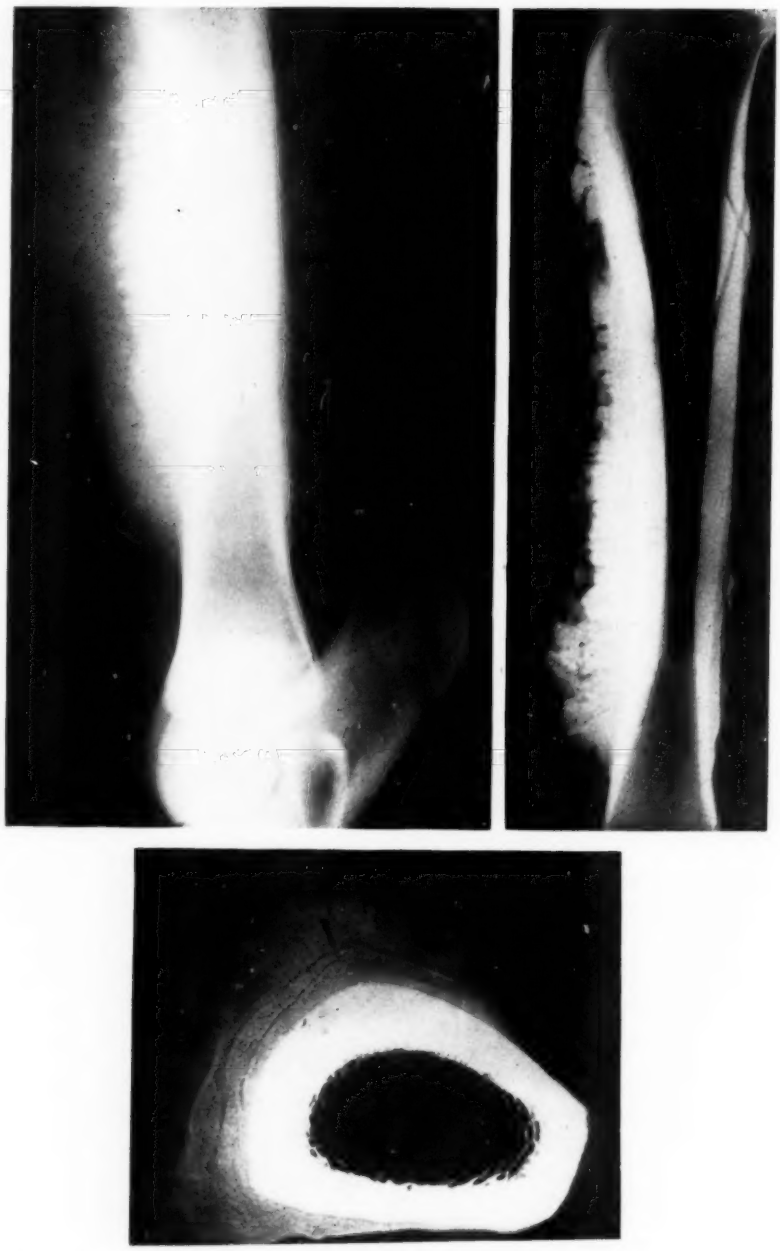

FIG. 2 (top left).—Lateral of right tibia and hock joint. Extensive osteophytosis in tibial midshaft.

FIG. 3 (top right).—3 mm. L.S. of right tibia. Beyond the case of new periosteal bone osteophytes extend for a considerable distance into the surrounding dense connective tissue.

FIG. 4.—3 mm. T.S. from lower third of right tibia. New bone formation is particularly marked on the anterior border and internal surface.

The Treatment of Retention of the Placenta in the Bovine Animal

BY

C. M. GOULD, A. C. GOULD, and D. F. GRAY

Southampton

SUMMARY.—Various methods of treatment of retention of the placenta in the bovine animal are compared, three methods of evaluating a treatment are described, and the uses of pessaries are discussed.

Introduction

ROUTINELY we do not remove a retained placenta unless very little or no manipulation is required to achieve complete separation from the maternal cotyledons. Whether or not the placenta is removed, one or more pessaries containing a disinfectant or antibiotic are introduced into the uterus to check or stop bacterial metabolism there, which can lead to pyrexia and toxaemia.

In 1955 one of us was very much impressed by the efficiency of introducing into the uterus either a pessary containing chlortetracycline or the contents of an intramammary preparation containing oxytetracycline and polymyxin B. The results suggested that all methods of treatment previously used had been of little or no benefit in the reduction of the pyrexia often associated with the condition. Since that time several new pessaries have come on the market with little, if any, published evidence of their efficiency. This has caused us to seek a method of evaluating such pessaries over as few cases as possible, knowing as we do that our present methods of treatment are highly successful.

Method 1

Each animal included in this experiment had to fulfil 3 conditions:—

(1) Cow or heifer, aborting or calving to time, having a temperature of 102.5° F. or more.

(2) Retained placenta still firmly attached and not removed.

(3) No complications, *e.g.* mastitis, diarrhoea, milk fever, or profound toxaemia (*i.e.* moribund). During the trial no animal was rejected for this last reason.

Either a pessary containing 500 mg. chlortetracycline, or the contents of an intramammary preparation containing 428 mg. oxytetracycline and 7.1 mg. polymyxin B. (35,500 I.U.) were inserted *in utero*. The temperature of the animal was taken on the following day.

Criterion of Success

The case was considered to be improved if the temperature was 102° F. or less on the following day.

Results

Of 100 cases treated with chlortetracycline 91 were considered to be improved.

Of 100 cases treated with oxytetracycline 89 were considered to be improved.

The difference between these treatments was not significant. Both were far more successful than any previously used. Such treatments had included:—

A Case of Hypertrophic Pulmonary Osteoarthropathy in a Mare.—*Concluded.*

The interesting operative results in man reported by Wyburn-Mason (1948), Flavel (1953; 1956) and Semple and McCluskie (1955) and in the dog by Rex (1959) indicate that pain, soft issue changes and bone resorption follow a variety of surgical measures the common feature of which appears to be section of autonomic nerve fibres in the pulmonary hilus. This further supports the contention that an autonomic reflex is involved in the aetiology.

The occasional appearance of H.P.O.A. in association with diseases affecting organs not in the chest such as the liver or stomach, suggests that there may be more than one aetiological factor involved in the disease, although circulatory changes in the distal parts of the skeleton probably combined with age changes in the parosseous connective tissue may well be a feature common to all cases.

The localised pleural adhesion with minimal pulmonary pathological change in this horse suggests that perhaps the site, rather than the size of a lesion in relation to the pulmonary nerve distribution, may also be an important factor.

Further observations are required into this disease in which a study of comparative medicine would seem to offer rich rewards. This case illustrates the important part which veterinary science can play in the elucidation of problems of considerable interest in human medicine.

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Up to 4 pessaries each containing 250 mg. streptomycin and 50 mg. dibromopropamidine isethionate.

One or 2 pessaries each containing 1 g. chlorhexidine.

Pessaries containing iodoform.

Up to 500 mg. streptomycin in an intramammary ointment base. Up to 300,000 units penicillin in an intramammary ointment base. (Wilson (1950), too, infers that 200 to 400,000 units penicillin does not produce a spectacular temperature response.)

Pessaries containing 500,000 units penicillin and 500 mg. streptomycin. (Only a few cases were recorded in this practice, but the finding was confirmed by several general practitioners.)

With or without parenteral treatment of up to 5,000,000 units penicillin, 5 g. streptomycin, 200 ml. 33 per cent. sulphadimidine or a combination of these drugs.

Since our early experiment we have used chlortetracycline pessaries routinely. No lessening of efficiency has been noticed when the newer intramammary preparation of oxytetracycline was used, despite the absence of polymyxin. Failures to reduce temperature have twice been associated with infection of the wall of the uterus after caesarean section and once as the result of tearing the uterine wall in the region of the cervix. Only one case has died. This animal had been scouring for 2 days before it was seen, was very dehydrated and had a temperature of 104.5° F. Despite the poor prognosis treatment was given: 2 x 500 mg. aureomycin into the uterus which was almost closed, so that the placenta could not be removed; 200 ml. 33⅓ per cent. sulphadimidine injected intravenously, 2 pints 5 per cent. glucose saline subcutaneously, and 2 pints normal saline subcutaneously. By the following day the animal had stopped scouring, the temperature was 101.5° F. and the uterus had opened enough to extract the placenta. Treatment was continued, but the animal never began to eat and died three days later. On autopsy, as was expected, a fatty liver was found.

Of those cases which did not respond to the tetracyclines 9 out of a series of 10 responded to 2,000,000 units penicillin in distilled water injected into the uterus. This change of treatment was carried out because doubling the dose of chlortetracycline did not produce any marked response when 500 mg. had failed. Other patients have responded to 20 g. of a mixture containing equal parts sulphadiazine, sulphamerazine and sulphapyridine locally. Some do not respond to any treatment at all until the uterine condition clears itself.

Of such cases most occurred on a single farm where 2,000,000 units penicillin is injected into the uterus as first choice, so far with excellent results in every case. Two other farms have a proportion of similar cases, but otherwise the instances are isolated.

Since enteritis is as common a serious complication of a retained placenta as any other, rivalling mastitis, any parenteral treatment considered necessary is undertaken with this in mind.

After this series of observations we considered that a quick evaluation of new methods of treatment could be carried out over 10 cases selected by a similar criterion, matched with 10 using one of the tetracyclines.

In early 1960, when a pessary came out with streptomycin, polymyxin and stilboestrol in it we decided to undertake a trial as follows:—

Method 2

Every animal in this experiment had to fulfil 4 conditions:—

(1) Cow or heifer calving to time. Temperature 103° F. or more.
(2) Seen on the third, fourth or fifth day after parturition.
(3) Retained placenta still firmly attached and not removed.
(4) No complications, *e.g.* mastitis, diarrhoea, milk fever, moribund, etc.

In alternate cases either a pessary containing 500 mg. chlortetracycline, or the streptomycin polymyxin stilboestrol pessary was introduced.

Criterion of Success

Temperature was reduced to 102° F., or below, the following day.

Results

Of 10 cases treated with chlortetracycline 9 were considered to be improved.

Of 10 cases treated with the other pessary 1 was considered to be improved.

A second trial was initiated using aborters instead of cattle calving to time.

Results

Of 5 cases treated with chlortetracycline 5 were considered to be improved.

Of 5 cases treated with the other pessary none was considered to be improved.

So far, it appears that the efficiency of the tetracyclines has not declined noticeably despite their routine use over the past 5 years.

Method 3

We next treated 10 cases consecutively with another pessary containing liq. benzalkonium chloride and aminacrine hydrochloride using the same criteria for both selection and success.

Results

Of 10 cases treated with this pessary 1 was considered to be improved.

Discussion

There are 4 possible uses of pessaries:—

(1) To reduce or eliminate the pyrexia.
(2) To hasten the expulsion of the placenta.
(3) To lessen the incidence of chronic metritis (" whites ") which can be a sequel of a retained placenta, and any infertility which may be associated with it.
(4) To eliminate specific organisms such as *Brucella abortus* and *Vibrio fetus* from the uterine discharge.

We were not in a position to investigate the efficiency of the substances tested for elimination of Brucella or Vibrio organisms. Since *Br. abortus* can survive intracellularly, and since it is reputed to be very difficult to eliminate in human patients, we feel that the presence of antibiotics known to kill the organisms, even in large numbers, should not be accepted as guaranteeing a discharge free of these organisms until this has been definitely proved to occur consistently over a large number of cases.

The sequel, chronic metritis ("whites") after parturition, seems to us to be related closely to the amount of placental and cotyledonous debris left in the uterus after removal of the placenta and lochia. This appears to have no direct relationship with the pessary used as far as we have observed.

Easterbrook, Hemboldt and Plastridge (1955) and Newlin (1952) suggest that at least as good a conception rate follows the use of the tetracyclines as any other treatment.

In our records and experience the variability of the interval between parturition and the expulsion of the placenta is so great, and has no obvious correlation with any other factor, that we have decided to assume that the expulsion of the placenta is not hastened unless the effect is constant in many cases over several months. We have instances in which, over 2 to 3 months, no case required more than 2 visits: the first to discover that the placenta was not in a fit state for immediate removal, the second within the next 3 days to remove it. One can hardly have fewer visits than this, when evaluating a pessary.

Not only because of these difficulties, but also on economic grounds, we believe the evaluation of a pessary in the field rests primarily on its effect on reducing pyrexia, since it is not proved that the conception rate is markedly depressed (Benesch & Wright, 1951).

To do this initially, we recommend that up to 10 such cases of uncomplicated retention of the placenta be treated consecutively. If at least 4 of the 10 respond to treatment a controlled trial is probably worth while.

The present position in regard to pessaries could be clarified if several veterinary surgeons, having records of treatment of similar cases, would be good enough to report them. This state of affairs could then be satisfactorily maintained if any new pessary designed for this purpose underwent a trial under similar conditions, the results of which were published at the time of its first appearance on the market.

Acknowledgment.—We wish to acknowledge with thanks the generous supply of pessaries from Messrs. Burroughs Wellcome & Co.

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Clinical Note

Caecal Impaction in the Dog

V. and M. J. R. Stockman

Barnet

Subject

A 6-year-old Cocker Spaniel dog.

History

First day: the dog began to vomit and refused food.

Second and third days: straining started and symptoms of pain were shown. There was little vomiting.

Fourth day: the dog was brought for examination, with no history except the bare details as given above. Anorexia had been complete since the morning of the first day. The patient was very miserable, and showed a tendency to lie down if left even for a moment. Abdominal pain was not marked. Rectal examination showed 4 spicules of bone just anterior to the anal ring. These were removed manually.

Enemata were given and produced immediate and satisfactory results. The animal vomited after both enemata, but seemed relieved and was sent home.

The same night the owner telephoned to say that the dog was vomiting occasionally and making straining efforts without avail. Sedatives were administered, and the dog passed a quiet, uneventful night. A message in the morning stated that it was still comfortable and was neither vomiting nor straining, but a further message, at midday, said that the dog had begun to vomit again violently, appeared seriously ill and was very depressed.

Fifth day: Examination in the owner's home was somewhat alarming. The dog's temperature was 98.8° F. Depression was excessive. Conjunctival mucous membranes were a dull brick red. The rectum was empty. Abdominal palpation was obviously acutely painful.

The animal was taken to the surgery and thiambutane* was administered intravenously (1.4 mg. per lb. bodyweight). This produced good relaxation of the previously hard abdominal wall. Palpation revealed that the abdomen contained very little solid matter, but otherwise gave little help. In view of the animal's condition it was considered that exploratory laparotomy was indicated although the prognosis seemed poor.

Thiopentone sodium† was administered by intravenous drip continuing throughout the operation which lasted about an hour in all.

The Operation

The left flank area was clipped and cleansed. An incision was made through skin, muscle layers, and peritoneum, mid-way between the last rib and the stifle. As soon as the abdominal wall was opened

*Themalon: Burroughs, Wellcome.
† Intraval Sodium: May & Baker.

(*Concluded at foot of page overleaf*)

True Haemophilia (Haemophilia A) in a Thoroughbred Foal

BY

R. K. ARCHER

Equine Research Station, Animal Health Trust, Newmarket.

SUMMARY.—A case of haemophilia A is described in a Thoroughbred foal. This is, to the best of our knowledge, the first recorded such case in a horse. A request is made that any young foals showing the symptoms of "bleeders" may be drawn to the attention of the Equine Research Station.

Introduction

THERE are a number of circumstances in which man or animals may bleed abnormally. These cases are popularly called "bleeders," and the word haemophilia has often been used to describe them regardless of the various pathogeneses. In recent times the word haemophilia has been used to describe a specific disease which is characterised by a deficiency, whether partial or complete, of one specific blood coagulation factor—antihaemophilic globulin (A.H.G.). More correctly, this disease is referred to as "true haemophilia," "haemophilia A," or "factor VIII deficiency," since there is a further condition variously called "pseudo haemophilia," "Christmas disease," "haemophilia B" or "factor IX deficiency." This latter condition is clinically similar to haemophilia A, but differs in that a different, and readily distinguishable blood coagulation factor is deficient.

Haemophilia A has been recognised in man for a long time. A full description may be found in the text-book by Biggs and Macfarlane (1957). The disease also occurs in dogs (Hutt *et al.*, 1948; Graham *et al.*, 1949; Archer & Bowden, 1959), but there are no reports in the literature of true haemophilia A in the horse.

In man and dog the disease produces a haemor-

Caecal Impaction in the Dog.—*Concluded.*

a pink fibrinous fluid began to escape. This flow continued until about 6 to 8 oz. had been removed. The fluid was followed by what appeared to be a welling of pure blood. Almost the entire length of small and large intestines was reddened and covered with blood. No immediate source of blood was found, but prolonged search revealed that there was a hard body anterior to the incision in the dorsal abdomen. This proved to be the caecum, and contained 2 small firm faecal impactions. Blood was exuding rapidly from the external surface of the caecum, and at this point 3 c.c. of a parenteral haemastat* were administered intramuscularly. At the same time an intravenous drip of dextran injection† was set up and 125 c.c. were given.

The caecum was opened and the caecal contents removed. The caecum was closed with 3/0 chromic catgut and the haemorrhage from the external surface had ceased.

The abdomen was now closed with No. 1 catgut through muscle layers and peritoneum. Before the last suture was tied 500,000 units crystalline penicillin‡ and 0.5 g. streptomycin/dihydrostreptomycin§ were injected into the abdominal cavity. The skin was closed with braided nylon. Pethidine was given before consciousness was regained.

Crystalline penicillin and procaine penicillin* were administered subcutaneously.

Sixth day: The dog appeared brighter and had not vomited. Straining was absent. Procaine penicillin was given, and glucose in water was drunk, but this caused vomiting. Temperature was 101.5° F.

Seventh day: Recovery continued. Glucose and water were drunk readily, and there was no vomiting or straining. Procaine penicillin continued to be given. Abdominal tenderness was acute.

Eighth day: Progress continued. "Rabbit gravy" was taken as well as glucose. A small semi-formed motion was passed, and procaine penicillin administration continued.

Ninth to twelfth days: Progress was maintained: rabbit, well minced, was eaten ravenously. Further normal motions were passed. The animal was sent home, with the abdominal pain disappearing.

Fifteenth day: The sutures were removed. The dog was in bright, cheerful condition, eating well, had no vomiting, and the motions were normal.

Twenty-third day: A slight swelling had formed beneath the wound, but the patient otherwise was normal.

We recall a similar case seen in 1956, that of an elderly Cairn dog. X-ray examination revealed masses of bone fragments in 2 conjoined circles. Laparotomy showed these to be in the caecum; at operation the dog died under the anaesthetic.

Enquiries from colleagues have failed to suggest any previous records of this condition, although it may be more common than is supposed. It certainly should be borne in mind in the differential diagnosis of cases of acute straining.

* Venagmin: Willows Francis.

† Intradex: Glaxo.

‡ Glaxo.

§ Dimycin: Glaxo.

* Mylipen: Glaxo.

rhagic tendency in infancy, and remains throughout the life of the patient which is usually much curtailed. The bleeding may occur almost anywhere and may be serious following such minor surgical operations as amputation of tail, dew claws or dental extractions. The disease is inherited as a sex-linked recessive character carred on the X chromosome. Males are affected, females are usually only carriers of the disease although there have been very rare reports of female haemophilics both human and canine (Biggs & Macfarlane, 1957).

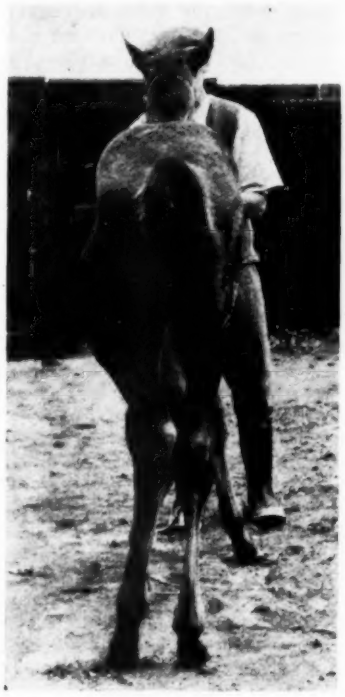

FIG. 1A.

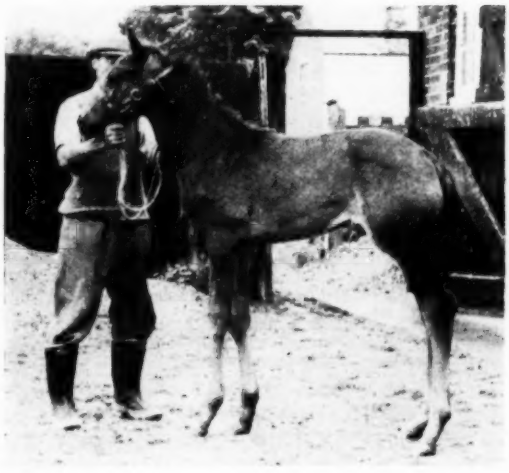

FIG. 1B.

FIG. 1.—Foal suffering from haemophilia A, aged 3 months. Note large haematoma on left hind quarter.

Case History

A male Thoroughbred foal was born on April 29th, 1960, in a Newmarket stud. The foaling was uneventful. On May 3rd, 1960, the foal had a large haematomata on the right hind quarter extending from hip to stifle. It was also noticed that there were several small haematomata on the foal's back and neck where the mare had bitten him. There was no fever and no evidence of bacterial infection. The case is illustrated in Fig. 1 at a later date (July 7th, 1960, aged 3 months) when the haematoma on the right side had been surgically relieved, but another had occurred on the left side.

Laboratory Findings on May 4th, 1960

Urine and faeces were normal.

BLOOD:—

Cellular haematology: haemoglobin 7.8 g. per cent.
Erythrocytes 5.45 × 10^6 per c.mm.: haematocrit 20.0 per cent.
Leucocytes 8,450 per c.mm.: differential count normal.

COAGULOGRAM:—

Recalcified plasma time 2 min. 54 sec. (control 2 min. 30 sec.).
1-stage time (brain) 13 seconds (normal).
Platelets 247,000 per c.mm.

THROMBOPLASTIN SCREENING TEST (HARDISTY AND MARGOLIS, 1959)

Incubation mixture	Incubation times (minutes). Substrate clotting times (seconds)					
	2	4	6	8	10	12
Patient's plasma ...	44	36	36	16	15	20
Normal plasma ...	25	10·5	12·5	—	—	—

THROMBOPLASTIN GENERATION TEST (T.G.T.)

Al-plasma	Serum	Addition	Incubation times (minutes) Substrate clotting times (secs.)				
			1	2	3	4	5
Patient	Patient	—	68	32	18	14	15·5
Normal	Normal	—	11	10·5	12·5	—	—
Normal	Patient	—	11	9	10	—	—
Patient	Normal	—	31	20	16	16	19
Patient	Patient	AHG	16	12	12·5	12·5	12·5
Patient	Patient	—	35	22	19	18	19·5

NOTES.—T.G.T. series run in the order given, reagents at 37° C. all the time (duration about 1½ hours). Normal horse plasma was used as substrate throughout. A.H.G. was prepared from equine plasma and had been preserved at –20° C. for about a year. The results of the T.G.T. are shown graphically in Fig. 2, and the technique used was that described in an earlier publication (Archer, 1959).

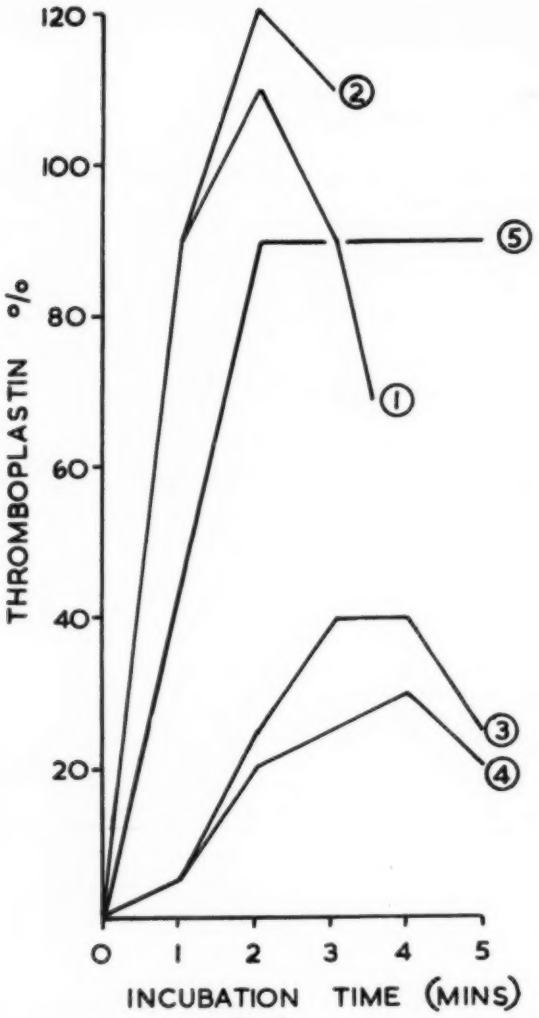

FIG. 2.

FIG. 2.—Thromboplastin generation tests on the haemophilic foal.

Curve (1) Normal system.
(2) Normal Al-plasma and patient's serum.
(3) Patient's Al-plasma and normal serum.
(4) Patient's system.
(5) Patient's system with added horse A.H.G.

Diagnosis

These laboratory tests established a diagnosis of haemophilia A which had caused various haematomata, so that there was also a secondary anaemia.

Discussion

It is believed that this is the first recorded case of true haemophilia in a horse. Both the symptoms and the laboratory findings indicate that the disease is similar to that seen in man and in the dog. Investigations into the inheritance of this case are incomplete and present considerable difficulty because of the reluctance of owners of valuable horses to provide information about their stock or blood samples from their animals.

This case has been of very great interest both as an example of comparative pathology and as a means of experimental investigations on the disease with possible applications both to man and animals. A description of the experiments carried out, together with full details of the laboratory investigations, clinical history, etc., will be published elsewhere.

Haemophilia poses a most serious social problem for those most unfortunate human beings who suffer from it. Never, so long as they may live, can they behave normally, since what would to an ordinary person be a small knock or injury may well cause death from haemorrhage. In the animal population, too, this disease must rate very high in importance amongst incurable conditions, especially when it is recalled that it is inherited.

It is very possible that experimental work could be done on haemophilic horses which might assist both man and other animals which may be afflicted with the condition. For this reason, it would be very greatly appreciated if any cases in young foals which appear to have the symptoms of "bleeders," possibly similar to that described above, could be drawn to our attention. We would be most happy to help with diagnosis and management of such cases and any instances of true haemophilia found would be welcomed at the Equine Research Station for detailed study. Contact may be made either with the Director of the Equine Research Station, with the author, or with Dr. R. G. Macfarlane, F.R.S., at the Blood Coagulation Research Unit, Churchill Hospital, Oxford, from whom, together with Dr. Nossel of the same Unit, the author has had valuable collaboration in these investigations.

Acknowledgments.—I am greatly obliged to Mr. F. T. Day, F.R.C.V.S., with whom I was able to see this case and who arranged with the owner to make the animal available to us at the Equine Research Station, for detailed and prolonged study.

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FOOT-AND-MOUTH DISEASE

Restrictions on the movement and marketing of livestock in the Infected Area around Acton, Nantwich, Cheshire, were withdrawn on April 6th.

The 9 outbreaks in this area involved the slaughter of 744 cattle, 405 sheep and 656 pigs.

Concerning the Stability of Pyruvate and Citrate in Fluorided Shed Blood

BY

P. J. PEARCE

Department of Animal Husbandry and Veterinary Preventive Medicine, University of Glasgow Veterinary School

BACH and Hibbitt (1958) have reported that a number of blood constituents are stable in separated serum preserved with sodium fluoride. They suggest that if blood is collected with sodium fluoride then serum separated 12 to 24 hours later is suitable for a number of different estimations. There is little reason to doubt that this is correct for certain substances, for example, glucose. However, the claim is rather surprising so far as pyruvate is concerned. A number of reports exist that large changes in pyruvate concentration occur in shed blood, and that sodium fluoride does not prevent such changes (Long, 1944), at least in concentrations which prevent coagulation. The concentration of sodium fluoride recommended by Bach and Hibbitt (20 mg. per oz. bottle) does not prevent clotting—it therefore seemed possible that the alleged stability of pyruvate was attributable to this factor.

Since stabilisation with sodium fluoride would offer a simple and convenient method of determining serum pyruvate this possibility has been tested.

Methods

Blood was obtained from the jugular veins of cows. The freely-flowing blood was collected directly from the bleeding needle into a bottle containing sodium fluoride (approximately 0.8 mg. per ml. blood). The sample was rapidly mixed and divided into a number of different portions before clotting occurred. Some portions of blood were deproteinised with trichloroacetic acid within 2 minutes of collection. Other portions of blood (in centrifuge tubes) were deproteinised after standing at room temperature for various periods of time. Further portions of blood (in bijou bottles) were used to prepare serum samples after similar periods of standing. The separated sera were then deproteinised promptly. One portion of blood was added to a bottle containing heparin and this was used to prepare blood and plasma filtrates about 1 hour after collection. This expedient was necessary since it is difficult to obtain serum from clotted bovine blood soon after collection.

Pyruvate was determined by a modification of the solvent extraction method of Friedemann (1957), using either benzene or ethyl benzene. The extinction of the sodium carbonate extract of the hydrazone was read first at 380 mμ and then, after adding alkali, at 520 mμ (Koepsell & Sharpe, 1952). Citrate was determined by the method of McArdle (1955) with minor modifications.

Results and Discussion

Typical results for pyruvate are given in Table I. It would seem that either the method used is quite inadequate for pyruvate determinations in bovine blood, or that large and variable changes occur in shed bovine blood preserved with sodium fluoride. The second conclusion would seem the more likely.

It will be seen from the Table that compared with the initial sample, blood deproteinised at 1 and 8 hours after collection showed decreased pyruvate levels. With one exception increased levels were found after 24 hours. All samples tested showed elevated concentrations after 48 hours.

Interpretation of the changes found in serum is complicated by the non-availability of a zero-time sample. However, it would again appear that concentrations fell at first and subsequently rose, probably to above the initial level. In at least some cases it would seem likely that levels were elevated by 24 hours after collection, that is within the time limits for serum separation suggested by Bach and Hibbitt. These workers have demonstrated that serum from blood collected with sodium fluoride contained less pyruvate than serum from blood taken without fluoride. They infer that fluorided serum gives the "true" (*i.e. in vivo*) level. However, this assumption does not appear to have been tested by them. The results of the present study suggest that fluoride does not prevent large *in vitro* changes in the pyruvate level of shed bovine blood. It would seem that possible differences in specificity between the paper-chromatographic method used by Bach and Hibbitt and the solvent extraction method used here are unlikely to be sufficient to account for the large changes found.

Bach and Hibbitt (1959) have reported that serum pyruvate is markedly elevated in cases of bovine ketosis. If *in vitro* changes occur in blood before serum separation, the significance of this observation may be questioned. Possible factors of importance would include the concentration of pyruvate precursors (*e.g.* phosphoglycerate), and the rates of pyruvate formation and utilisation. These rates would probably depend largely on the activities of certain enzymes. These activities would, at least in part, depend on the concentrations of the enzymes and on the environmental temperature. The enzymes concerned are probably mainly localised in the blood cells and changes in the haematocrit or in the leukocyte count might lead to major changes in the reaction rates.

It should be remarked that, in the present study, serum separated after 24 hours at room temperature contained, in some cases, pyruvate levels comparable to those found by Bach and Hibbitt (1959, 1960) in cases of bovine ketosis.

TABLE I
CHANGES IN PYRUVATE LEVELS IN SHED BOVINE BLOOD
Results as mg. pyruvic acid per 100 ml. blood, plasma or serum. Plasma values are in parentheses.

Animal	Sample	Time (hours)				
		0	1	8	24	48
Cow A.	Blood (NaF)	0·71	0·30	0·38	1·69	2·06
	Blood (Heparin-NaF)	—	0·31	—	—	—
	Plasma or Serum	—	(0·48)	0·70	1·24	2·30
Cow B.	Blood (NaF)	0·68	0·46	0·28	1·51	—
	Blood (Heparin-NaF)	—	0·40	—	—	—
	Plasma or Serum	—	(0·67)	0·47	0·68	—
Cow C.	Blood (NaF)	1·03	0·60	0·31	0·95	—
	Blood (Heparin-NaF)	—	0·67	—	—	—
	Plasma or Serum	—	(0·99)	0·44	0·50	—
Cow D.	Blood (NaF)	0·89	0·47	0·46	2·00	2·67
	Blood (Heparin-NaF)	—	0·51	—	—	—
	Plasma or Serum	—	(0·69)	0·50	2·28	3·09
Cow E.	Blood (NaF)	0·99	0·62	0·32	1·30	1·93
	Blood (Heparin-NaF)	—	0·69	—	—	—
	Plasma or Serum	—	(0·88)	0·33	1·37	2·35
Cow F.	Blood (NaF)	0·91	0·43	0·62	2·92	3·66
	Blood (Heparin-NaF)	—	0·41	—	—	—
	Plasma or Serum	—	(0·64)	0·97	3·56	4·22
Cow G.	Blood (NaF)	1·11	0·48	0·51	2·43	4·53
	Blood (Heparin-NaF)	—	0·58	—	—	—
	Plasma or Serum	—	(0·86)	0·90	1·75	4·94
Cow H.	Blood (NaF)	1·66	0·72	0·56	1·79	3·44
	Blood (Heparin-NaF)	—	0·76	—	—	—
	Plasma or Serum	—	(0·91)	0·76	1·21	4·05

In contrast to pyruvate, no evidence was obtained for large changes in citrate concentration in shed blood. Such small changes as were observed seem within the limits of experimental error, and no particular trend was discernible. It is, however, to be noted that whereas, in the small series of cows tested, serum citrate averaged 3.9 mg. per 100 ml. (which is fairly close to Bach and Hibbitt's normal value), in 2 cases of Johne's disease serum citrate was only 1.8 and 1.6 mg. per 100 ml. respectively. It would seem possible therefore that the low serum citrate (averaging 0.89 mg. per 100 ml.) observed by Bach and Hibbitt in cases of bovine ketosis may be a relatively non-specific effect perhaps related to inanition.

Bach and Hibbitt have also reported changes in α-oxoglutarate and succinate in blood serum from ketotic cows. These 2 metabolites were not estimated in the present study; however, it would seem that possible *in vitro* changes should be excluded before their results can be accepted.

Conclusion

Large and variable changes in pyruvate concentration seem to occur in shed bovine blood containing sodium fluoride. In contrast citrate appears to be stable in such samples.

Acknowledgments.—The author thanks Professor J. S. S. Inglis for his interest in this work. Animals and blood samples were kindly made available by Mr. A. J. D. Campbell, Mr. R. G. Dalton and Mr. S. Jennings. Thanks are also due to Miss M. Young for technical assistance.

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An Improved Tracheal Cannula for use in Indirect Calorimetry and other Studies

BY

E. CRESSWELL *

AND

LORIN E. HARRIS †

Utah State University, Logan, Utah

A NEW technique in indirect calorimetry was described by Webster and Cresswell (1957), and Cresswell (1958, 1961). Briefly it involves fitting sheep with a modified "Field" pattern tracheotomy tube and the use of a connexion tube which, when attached to the cannula introduces an inflatable balloon into the upper trachea. When inflated, the balloon cuts off communication between the trachea and the mouth. The connexion tube can then be linked to an oxygen spirometer, or can be replaced by a Y tube incorporating 2 one-way valves, and the expired air collected to give the carbon dioxide production.

However, the following are problems in the long term maintenance of tracheal fistulae. (1) A tendency for sideways closure of the tracheal lumen to occur in the location of the severed ring or rings. (2) A tendency for the upper and lower sections of the trachea to close off independently of the above reaction due to distortion of the tracheal rings. (3) The reaction of the mucous membranes in contact with the tracheotomy tube which occurs regardless of the material from which it is constructed. This reaction has been described as a progressive oedema of the membranes followed by fibrosis and a consequent narrowing of the lumen, Cresswell (1958).

The cannula developed in New Zealand allowed some of these problems to be partially solved, but the present model is a great improvement on it. Figures 1 and 2 show both types of cannula, which are made of chrome plated copper. The tongues of both cannulas terminate with a full ring of metal, but the cannula in Fig. 2 has a plastic (Tygon‡) sheath on both tips to support the tracheal walls. The bore of the outer cone of a standard design cannula is sufficient only to allow the insertion of the inner cone. In the improved cannula the bore was widened to allow the insertion of the inner cone plus the tygon sheath. Thus it was possible to add or lengthen the plastic extension to both tongues of the cannula. With the first model it was possible only to do this with the lower tongue whenever oedematous thickening of the mucous membranes threatened to close the trachea. Five months was the shortest period before this happened using tygon tips.

A small plastic ring around the stem of the inner cone made an airtight seal between the cones when the cannula was assembled. The new cannula also incorporates a plastic loop as an integral part of the outer cone of the tube. When the tube is inserted into the trachea the loop supports the walls of the trachea in the region of the severed rings and very effectively prevents sideways closure of the lumen. With the cannula in Fig. 2 it is possible to maintain tracheal fistulae with the minimum of attention.

An airtight seal between the stem of the cannula and an animal's shaven neck is obtained by cementing a rubber ring with a large hole (Fig. 2) to the animal with branding cement* and then inserting the cannula and bonding a rubber ring with a small hole (the ring grips the stem of the outer cone of the cannula) to the large ring with rubber solution. Support is given by a sponge rubber pad (Fig. 2) which is fastened around the animal's neck with the cannula appearing through the square hole as in Fig. 3.

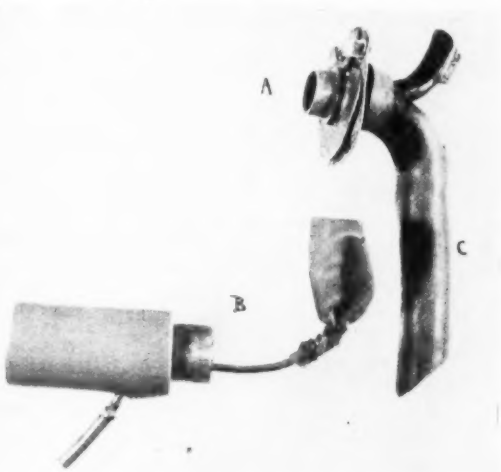

FIG. 1.—A.—a modified Field pattern tracheotomy tube. B.—connexion tube with introducer tube and balloon. C.—rubber sheath on the tongue of the outer cone.

Experimental work carried out with this improved cannula will be reported elsewhere.

* Now at The Rowett Research Institute, Aberdeen, respectively.

† Visiting Professor and Professor of Animal Husbandry. Scotland.

‡ Other plastics used tended to harden in the trachea and rapidly cause irritation of the mucous membranes and narrowing of the lumen.

* Nebraska Salesbrook Co., Lincoln, Nebraska.

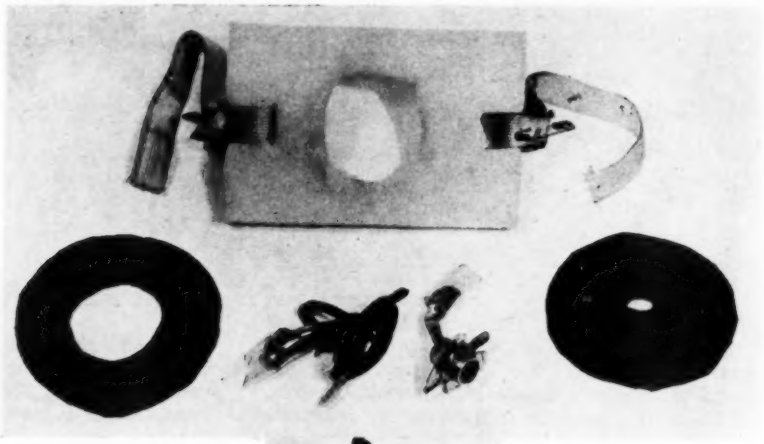

FIG. 2.—Showing the breakdown and assembly of the further modified Field pattern tracheotomy tube.

FIG. 3.—Close up of a sheep with tracheal balloon inserted and inflated.

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Clinical Note

Treatment of Pulmonary Oedema in the Cow with Hydrochlorothiazide*

R. W. JOHNSTON

Longside, Aberdeenshire

Subject. An Ayrshire cow.

Symptoms. The animal was very distressed, her breathing was laboured, and she was sweating with a temperature of 101.8° F. On auscultation of the chest bubbling râles and rhonchi were audible.

The animal had been normal when seen by the owner 2 hours previously.

Diagnosis. Pulmonary oedema.

Treatment. Five hundred mg. of hydrochlorothiazide were injected intramuscularly. No other treatment was given.

Result. When seen 3 hours later there was a marked improvement in the condition of the patient. The next morning the animal showed little sign of the severe attack of the previous day. Recovery was uneventful.

Summary. A case of pulmonary oedema treated successfully with hydrochlorothiazide is recorded. This is one of the several such cases treated with good response.

* Vetidrex: Ciba Laboratories.

Current Literature

BOOK REVIEWS

Orthopaedic Surgery of the Dog and Cat. By ELLIS P. LEONARD. W. B. Saunders Company. London (1960). 87s. 6d.

This comprehensive volume on orthopaedic surgery fulfils a long-felt want in this country, and it is a pleasure to discover that it does so in a manner that can be welcomed without serious reservation.

Bone and joint surgery has become in the past 10 years commonplace routine in small-animal practice, and the student, the recent graduate, and the veterinary surgeon of long experience in practice, will alike rejoice at the advent of a sound, full, and well documented text-book on the procedures open to them today.

In this country particularly, with its relative lack of hospitalisation, internal fixation of fractures has become a routine well adapted to the case that is cared for at home.

Many veterinary surgeons here may regard halfpin fixations and, indeed, any methods requiring external scaffolding and splintage, as carrying a high order of risk from interference by the patient when nursed at home and, no doubt, will feel that Professor Leonard's book lays considerable emphasis on methods that may not be used much here.

This emphasis, however, is not to the exclusion of internal methods and is, in itself, of great value in aiming consistently at perfection in reduction and fixation, regardless of circumstances, while also pointing out the advantages, disadvantages, and prognosis, of alternative methods, and leaving the surgeon to choose that best adapted to his own case.

The book is logically divided into 4 sections, General Considerations, Fractures, Luxations, and Other Orthopaedic Diseases.

The section on General Considerations is useful and covers a wide ground. It includes a chapter on cartilage and bone formation and its circulation; one on bone healing, with a salutary reminder of the condition leading to delayed healing or non-union; and a chapter on Aseptic Surgery in Orthopaedics.

It is, perhaps, ungenerous to dismiss this latter with the comment that most of it is a repetition of what may be found in any text-book on general surgery and should be well known to any veterinary surgeon before he embarks on orthopaedic surgery. In any event it does no manner of harm to re-emphasise the need for aseptic techniques.

A chapter on Methods and Materials is one of the most useful in the book since it reminds the student that no 2 orthopaedic conditions are precisely identical, and it gives true value to the older methods of closed reduction and coaptation where applicable, as well as full description of all the more recent methods of internal and external fixation, insertion of prostheses, and so on.

A very minor criticism regarding the illustrations of the method of insertion of a general head prosthesis is that diagrams would probably have been very much clearer than the photographs of this particular procedure.

The section on fractures opens with a short classification and general comments on diagnosis and treatment before proceeding to list and describe each individual fracture according to its anatomical position.

The figures on incidence and distribution of fractures are based on 2,049 cases; they appear to differ little from those likely to pertain here.

Comments on aetiology provide an essential background in understanding the type and direction of force liable to cause any individual bone or joint injury. Pathology is discussed in each case, incidental tissue damage is described where necessary, and the discussion on the probable size of the haematoma and its bearing on healing rate, damage to adjacent nerves, muscular pull on the divided fragments, etc., leads on naturally to the description of the clinical signs of the fracture and its diagnosis and prognosis.

Treatment is then described or a reference given if it has been described already in the earlier general chapters.

The author usually indicates his preference, but gives wide reference to other methods.

Section 3 describes luxations and deals with them in similar manner. One curious omission in an otherwise very adequate section occurs under the heading of luxation of the patella. The author gives full value of the methods of medial desmotomy, surgical removal of the patella, cuneiform osteotomy on the lateral side of the femur, and the reinforcement of the lateral attachments of the patella by a strip of fascia lata, but does not even mention transplantation of the tibial crest nor the deepening of the trochlear groove.

In the case of the photographs illustrating the Paatsama operation for replacement of the anterior cruciate ligament, the same criticism applies as in a previous chapter, *i.e.* that good diagrams would have been easier to follow, though, in general, the book is both well and profusely illustrated with diagrams, photographs and X-ray photographs.

Under the final general heading of Other Orthopaedic Diseases the author discusses, firstly, soft tissue repair in compound fractures including nerve, vascular, and tendon repair.

There follow chapters on intervertebral disc disease, hip dysplasia, and hypertrophic pulmonary osteoarthropathy.

These chapters are necessarily brief but, as is the case throughout the work each is followed by a wide list of references which takes due account of the British literature as well as the American. In all, it is a work which neither the student nor the surgeon can afford to be without.

The Jaws and Teeth of Primates. By W. WARWICK JAMES. Pitman Medical. London (1960). 105s.

The subject of this book is one which will appeal to few other than specialists in dental anatomy and primatology.

Experts in these fields will welcome the systematic review of the anatomy of the jaws and teeth in which at least 1 species from each extant genus of primate is considered. This systematic section forms the major part of the work and some will regret the comparative brevity of the descriptions. The value of this section would also have been greatly increased by a fuller consideration of cusp pattern, particularly in relation to the evolution and relationship of the surviving groups. The photographs which illustrate the book are, in the main, excellent and beautifully record the general form and proportions of the skull and dentition: they are, however, unsuited to the portrayal of the detailed anatomy of individual teeth.

The introductory sections are of a more general nature and provide an excellent introduction to the comparative study of the jaws and teeth. As will be expected by those acquainted with other work by this author they carry the stamp of authority. The appendices include 1 in which a layman with a wide experience of monkeys discusses the care of these creatures in captivity: this will interest many veterinary readers to whom the remainder of the work might appear irrelevant.

The Avian Embryo (Structural and Functional Development). By ALEXIS L. ROMANOFF. Macmillan. New York and London (1960). 210s.

Professor Romanoff has succeeded in his stated objective " . . . to analyse the existing knowledge of this subject which has been scattered throughout the world of literature, published in many languages, and was frequently inaccessible to most scientists."

An account of the reproductive cells is followed by a description of the process of fertilisation and the changes in early morphogenesis; of particular interest to the veterinary surgeon is the section on factors affecting fertility in domestic birds. Subsequent chapters deal with the embryology and histogenesis of the organ systems, the concluding chapter being devoted to the extra-embryonic membranes.

In this extensive work of reference, the author has gleaned the facts of avian embryology from literature of the 4th century up to the present time, where there is a lack of information, on the function of the glycogen body for example, this is seldom an error of omission but an indication of the work that remains to be done. However, regeneration and immunology are omitted, except in relation to the chorioallantois. Many intriguing facts emerge, such as the inactivity of the parathyroid in the foetus and the curiously varied embryonic differential leukocyte counts in different species, which cannot fail to stimulate the reader's interest in research in this field.

It is to be regretted that in so valuable a work of reference the index fails to fulfil its claim to be extensive, there is little cross-indexing, and animals are frequently referred to by their local popular names alone. Whilst the diagrams are well produced, on most pages a part of the type is out of line and the standard of the printing of the text is not good.

Radiography for the Veterinary Surgeon. By R. N. SMITH. John Wright. Bristol (1960).

A Guide to Canine Radiography. By S. GOULD. University of Queensland Press. Brisbane (1960). A30s.

The veterinary surgeon who employs radiographic methods has long been hampered by the absence of any published guide to these techniques; now, at last, he is presented with 2 works apparently for his assistance in this field. Both are slim, unpretentious volumes which, however, differ greatly in their scope. That by Smith covers the narrower field and combines an excellent, simple restatement of the theoretical and photographic aspects of radiography with a discussion of the basic construction and use of the X-ray machine and ancillary apparatus. Despite its title it contains little that is specifically veterinary in its application and the tyro concerned to apply radiography to a particular case will look in vain for the directions he requires. Gould's book will be found more helpful in this respect for he supplies a guide to the positioning and an indication of the exposure factors requisite for the examination of the different regions and organs of the dog. The suggestions found here are not, of course, to be slavishly copied but they will form a useful foundation on which the beginner may build his own experience. This section is illustrated by simple diagrams and by a disappointing selection of crudely touched-up radiographs. The directions for the use of the more complicated techniques applicable to the viscera are insufficient. In the earlier part of his book Gould touches upon those fields discussed by Smith but his observations on these matters are rather sketchy. It is fortunate that these 2 works have appeared together: neither alone is adequate but in conjunction they will provide a very serviceable introduction to small-animal radiography.

Farm Animals in Health and Disease. By W. R. WOOLDRIDGE. Crosby, Lockwood. London (2nd ed., 1960). 35s.

The second edition of this work is in much the same form as the first. Apart from being an excellent reference book for farmers, there is a definite theme running through it—the relationship between health and disease and between management and health. This theme has been preserved in the new edition and to have altered it in any way would have spoilt a carefully balanced study.

The author is careful to keep within his sphere and does not attempt to tell the farmer how to farm. In this he is quite right, but the farmer reader might feel a little frustrated at the lack of detail on how to achieve good management.

Be that as it may, the first part of the book is a straightforward account of good health and ill health and the relationship of the one to the other. The second part deals with the specific diseases of cattle, sheep, goats, pigs, horses, poultry and rabbits. The whole of this is clearly set out in simple language and will not confuse the farmer. The text has been carefully revised and is now quite up to date. The

information is given in such a way as to help the reader to understand diseases as he meets them, while there is nothing to encourage him to try home doctoring. This book can be recommended to any client who asks for one on the diseases of farm animals.

Henderson's Dictionary of Scientific Terms. By H. KENNETH. Oliver and Boyd, Edinburgh (1960). 32s.

This volume, revised by Dr. Kenneth, is a seventh edition of a standard work published in 1920.

The title may attract at first sight the veterinary worker, and, indeed, he will find the book of value when he wanders into the preserves of his fellow scientists in the fields of biology, botany, zoology, anatomy, cytology, genetics, embryology, and physiology.

Some 15,600 words are covered, and the spelling is, in the main, British, with cross reference to American orthography where it differs.

There is but one word of caution to the veterinary or medical enquirer. The book defines each word only in terms of the subjects stated. Thus, intussusception is defined as " growth in surface extent or volume by intercalation of particles among those already present." Its more familiar surgical connotation is not included.

Verruca refers to " wart-like projections surrounding the base of polyps in many Alcyonaria—or blister-like evaginations of body wall in some sea anemones," but it does not refer to the again more familiar disease of the human foot.

On the other hand, rather oddly, suprarenin earns a reference as synthetic adrenalin.

These, let it be said, are not criticisms of the work as such, which doubtless performs admirably the task which it sets out to do. They are simply indications of the limits of its field and its usefulness to the veterinary worker.

Lymphatics and Lymph Circulation—Physiology and Pathology. By ISTVAN RUSZNYOK, MIHALY FOLDI and GYORGY SZABO. Pergamon Press Ltd. Budapest (1960). 140s.

In this work the anatomy, physiology, and pathology, of the lymph system are subjected to a thorough analysis, and the work of other experimentalists is examined and appraised in the light of the authors' own work. They have drawn from a wide range of world literature and over 1,500 references are used.

In the first section the general phylogeny, ontogeny, and anatomy, are described; although much of the information is about the human this only reflects the balance of the investigations that have taken place in the past. The data that are available on other animals are given, for, as the authors point out, " Ignorance of the anatomy of the lymph system in test animals has caused numerous experimental failures and has led to many false conclusions." The anatomy of the lymph system of specific organs is described and very well illustrated, often in colour.

In the section (just under half the book) on general physiology and pathology, the theories on the origin of lymph are examined and evaluated. The rôle of the connective tissue in lymph formation, the absorption into lymph capillaries, and lymph flow, are all subjected to a searching analysis. The remainder of the book is devoted to the special physiology and pathology of the lymphatic system, and to such problems as the myocardial damage and pulmonary cirrhosis that can result from an insufficiency of local lymph flow.

This book is for all those whose research and/or teaching involves the lymph system in any form. For those who are not directly concerned it will still prove a fascinating work on a most interesting system. The arrangement, illustration and printing are all very satisfactory, but unfortunately the cost is high. Nevertheless, it can be recommended to all institutions where normal and abnormal anatomy and physiology are studied.

BOOKS RECEIVED

The Grass Crop—Its Development, Use and Maintenance, by William Davies. Spon, London (Second Edition, 1961). 45s.

The Popular Whippet, by C. H. Douglas Todd. Popular Dogs, London (1961). 21s.

Practical Dog Breeding and Genetics, by Eleanor Franklin. Popular Dogs, London (1961). 21s.

Flow Properties of Blood and Other Biological Systems, edited by A. L. Copley and G. Stainsby. Pergamon Press, Oxford (1960). 75s.

Archiv für Experimentelle Veterinärmedizin. S. Hirzel, Leipzig (1961).

Vibrio fetus *Infection of Cattle*, edited by J. A. Laing. F.A.O. (1960). 5s.

Archiv fur Wissenschaftliche und Praktische Tierheilkunde, prepared by G. Schutzler. Paul Parey, Berlin (1961). 32 DM.

Sabouradia—Journal of the International Society for Human and Animal Mycology. Vol. 1, Part 1, January, 1961. E. & S. Livingstone, Edinburgh. 20s. per Part.

Tierarztliche Operationslehre, by E. Berge and M. Westhues. Paul Parey, Berlin (1961). 39.60 DM.

Lucrarile Stiintifice Ale Institutului de Seruri si Vaccinuri Pasteur Bucuresti. Vol. III. Editura Agro-Silvica de Stat, Bucarest (1958).

Lucrarile Stiintifice Ale Institutului de Seruri si Vaccinuri Pasteur Bucuresti. Vol. IV. Editura Agro-Silvica, Bucarest (1960).

The Popular Chihuahua, by Thelma Gray. Popular Dogs, London (1961). 21s.

Diagnostic Aids in the Practice of Veterinary Medicine, by H. H. Berrier. C. W. Alban, Missouri (1961). $4.75.

The Complete Alsatian, by Nem Elliot. Nicholas Vane, London (1961). 36s.

Pain, by F. J. J. Buytendijk. Hutchinson, London (1961). 25s.

Divisional News

THE YORKSHIRE VETERINARY SOCIETY

A general meeting of the Yorkshire Veterinary Society was held on Friday, October 28th, 1960, in the Royal Station Hotel, York, at 2.30 p.m. The President, Mr. W. W. Wilson, was in the Chair. There were 27 members present and apologies for absence were received from 10 members. Mr. W. H. Parker attended as a guest.

Minutes

The minutes of the meetings held on July 29th at York and on September 14th at Askham Bryan were read and signed.

Correspondence

(a) Mr. B. T. Lawrence, Wakefield, had asked for a copy of the Society's Guide to Fees which had been sent to him with the President's approval.

(b) Notification of the Lakeland Society's Dinner Dance had been received.

Mr. Anderson (General Secretary of the B.V.A.) had written informing the Society officially that the 1962 Congress would be held in Scarborough. The Secretary had already written to find out how soon a provisional committee could be organised.

Membership

Messrs. A. Boothroyd, Boston Spa; N. W. Leslie, Boston Spa; W. H. Parker, Thirsk; M. Smith, York; and T. E. Singleton, Thirsk, were nominated for membership. Messrs. J. G. Prescott, Pontefract; and T. T. Hunter, Leeds, were unanimously elected.

Clinical Forum

Short papers on matters of clinical interest were given as follows:—

A. M. McFerran, "Reflections—Copper"; Miss M. Dalby, "Chinchillas and Fungus Diseases"; M. W. MacLean, "Y Disease" or "Why Young Cattle do Badly at Grass"; F. Lofthouse, "Fog Fever"; V. J. S. Leslie, "Paravertebral Anaesthesia"; G. S. Powley, "The Last 14 Days"; and E. V. Fawell, "Coccidiosis in Cattle."

It is hoped to be able to reproduce these papers in a form suitable for publication.

The writers of the papers were accorded a most sincere vote of thanks for their efforts which had made the meeting so extremely successful.

Rules

Reference was made to the notice of intended change of rules 7 and 29 as indicated on the notices of meeting.

Other Business

Mr. Lofthouse was thanked officially for his organisation of the Dance on October 13th, 1960, which had been enjoyed by all the members.

THE ROYAL COUNTIES VETERINARY ASSOCIATION

The Annual General Meeting was held on March 10th, 1961, at the Caversham Bridge Hotel, Reading. The President, Mr. E. J. Heather, occupied the Chair, and 37 members and 14 guests were present. Four members sent apologies for absence.

Minutes

The minutes of the previous Annual General Meeting were signed as correct.

Membership

The following gentleman was elected to membership: Mr. J. G. Crowhurst.

The following were proposed and seconded for membership: Messrs. L. R. Sterling, R. E. Abblett, P. G. Box, A. W. Roberts and C. J. Baxter.

Presidential Address

The President said this was the second time he had had the honour of addressing the Association as its President. His main theme was the B.V.A. Congress at Oxford in September, this being the first time the Royal Counties had acted as the host Division. He appealed to all the members to come forward and support the various committees in making this a memorable occasion.

Paper by Mr. G. B. S. Heath

Mr. Heath gave a paper entitled "Sheep Diseases," the subject being topical for the time of year. Mr. Heath dealt widely with conditions likely to be found in the area covered by the Royal Counties Association, and the paper was followed by a wide discussion of current problems.

Income and Expenditure Account

The Hon. Treasurer presented his account for 1960/61 and this was adopted unanimously.

B.V.A. Congress, Oxford, 1961

Dr. D. G. Howell, Congress Secretary, gave an outline of the arrangements for the B.V.A. Annual Congress, which were then almost complete.

Poultry Refresher Course

The Hon. Secretary reported that poultry refresher courses were now a matter for the Ministry of Agriculture by arrangement with the B.V.A., and consequently the projected second one-day refresher course would be postponed until official direction was received. If there was a wish for refresher courses on other subjects he would be glad to arrange some after the Congress.

Correspondence from the B.V.A.

Letters were read concerning the Harry Steele-Bodger Memorial prize, services by sales representatives, and enlargement of reports of meetings for publication in THE VETERINARY RECORD.

Other Correspondence

A letter was received from the Secretary of the Southern Counties Veterinary Society concerning swine fever crystal violet vaccination schemes. It was decided that, in view of the proposed eradication scheme, the time was inopportune for the introduction of such a scheme in this area.

Letters were received from the Secretary of the Central Veterinary Society inviting members to attend their annual dance and expressing their gratification that a Victory Medal of that Society had been used as the centrepiece of the medallion worn by the President of the Royal Counties Veterinary Association.

Summer Meeting

In view of Congress commitments it was decided that no summer meeting would be held although members would probably be convened just before Congress for a " briefing."

Dinner Dance

It was agreed that the venue for this function should be discussed between the next President and the Secretary.

Place of Next Meeting

It was agreed to hold this in Oxford.

THE CENTRAL VETERINARY SOCIETY

A meeting of the Society was held at 6 p.m. on Thursday, March 2nd, 1961, at the Royal Veterinary College by kind permission of the Principal. The President took the Chair at 6 p.m. Sixteen Fellows and 14 visitors attended, and apologies for absence were received from 14 Fellows.

Minutes

The Secretary reported that the minutes of 3 previous meetings had been submitted to THE VETERINARY RECORD and were awaiting publication.

Correspondence

Services by Sales Representatives. A letter from B.V.A. headquarters was read to the meeting in which the General Secretary requested members to forward details of the activities of sales representatives.

Harry Steele-Bodger Memorial Fund. Details of this letter were read out to remind Fellows of the existence of this fund, the principal purpose of which is to provide a travelling scholarship for a member of the profession.

Miss Freak's proposal, seconded by Miss Uvarov, that the Society should support the application of Mr. Oliver Graham-Jones was passed unanimously.

Primate Sub-Committee. The meeting was informed of the contents of the report of the primate Diseases Sub-committee and the intention of Council to submit the work to Headquarters.

Membership

Mr. A. M. R. Nelson, of Bishops Stortford, was elected a Fellow of the Society.

Address by Mr. R. V. Blamire

Under the title " Meat Inspection in England and Wales," Mr. R. V. Blamire, M.R.C.V.S., D.V.S.M., of the Ministry of Agriculture's Food Hygiene division gave a thorough general survey of the position regarding slaughtering, abattoirs and meat inspection at the present time. He explained how the present position had come about, the principles on which the present policy is based and the aims of that policy in the future. He referred in passing to the new type of meat inspection training which is just beginning.

His remarks led to a lively and prolonged discussion which was opened by Mr. G. F. Wiggins, M.R.C.V.S., and in which many Fellows joined.

THE NORTH OF IRELAND VETERINARY ASSOCIATION

The annual dinner of the Association will be held at the Grand Central Hotel, Belfast, on Friday, April 21st, 1961, and this year it is proposed to combine it with a celebration of the progress Northern Ireland has made towards the eradication of bovine tuberculosis. A number of distinguished guests have been invited.

Guest speakers will include the Minister of Agriculture, Mr. Harry West, M.P., Mr. Sydney Jennings, President of the British Veterinary Association, Mr. L. G. Anderson, Vice-President of the Royal College of Veterinary Surgeons, Mr. W. H. Long, Permanent Secretary of the Ministry of Agriculture and other distinguished representatives of various bodies.

The dinner will be formal and will be at 7 o'clock for 7.30. An inclusive charge of £2 per head will be made and members are asked to apply for tickets *not later than April 18th* to Dr. J. K. L. Pearson or to Mr. J. F. Rankin, the hon. Secretaries.

SOUTH-EAST MIDLANDS

The Ladies' Guild of the South-East Midlands Division held a most successful and enjoyable dance on March 15th at Overstone, Northampton, in aid of the Victoria Veterinary Benevolent Fund.

A profit of over £100 was made, part of this sum being realised by a tombola stall which proved a popular innovation. The Ladies' Guild were grateful to various drug firms, members of the Association and their friends who generously presented prizes.

The Ladies' Guild are this year donating £150 to the Victoria Veterinary Benevolent Fund.

News and Comment

MR. F. KNIGHT

Members of the British Veterinary Association will learn with great regret of the sudden death of Mr. F. Knight which took place in hospital last Monday, April 3rd. Mr. Knight retired from the post of General Secretary, which he had held for 35 years as recently as last November, and it is tragic indeed that he lived so short a time to enjoy leisure most worthily earned. His funeral takes place to-day (Saturday, April 8th) at Golder's Green.

Readers will remember that tributes were paid to Mr. Knight at the time of a presentation to him during the Glasgow Congress last year, when the Association, through its President, expressed its deep indebtedness for his lifetime of service and made him an Honorary Member. A further note of appreciation was published in THE VETERINARY RECORD of November 19th, 1960, at the time of his actual retirement.

The necessity of preparing this week's RECORD in advance, due to the Easter holiday, has obliged us to defer a full article on his career and contribution to the B.V.A. until next week.

R.C.V.S. CELEBRATION DINNER

Brief mention was made in these columns last week of the dinner at the Savoy Hotel, London, in honour of Sir John Ritchie, C.B., President of the R.C.V.S., and to celebrate the eradication of bovine tuberculosis in Great Britain. As was mentioned, the senior Vice-President, Mr. G. N. Gould, presided, and in welcoming the company he said:—

"Your presence here to-night at comparatively short notice is indicative of your wish to do honour to our President, Sir John Ritchie, and to celebrate the achievement of bovine tuberculosis eradication—a project of incalculable value to British agriculture.

"From the length and breadth of Great Britain, Minister, we have collected together representatives of your veterinary service, members of your permanent staff in all their various capacities, and veterinary surgeons in practice who act as local veterinary inspectors.

"Your illustrious father-in-law—that most distinguished Honorary Associate of our Royal College—spoke in another and sterner context—of how much was owed by so many to so few. Some of us have wondered whether the great mass of the nation realise—or have even had the opportunity to consider—what eradication means to them in terms not only of animal health and production but of human health: of children being able to grow up without the overshadowing menace of bovine tuberculosis, and of closed TB hospitals. Yet how small was the force that has achieved this in a period of time not so long ago thought impossible.

"I feel sure the magnificent contribution made by British farmers throughout the length and breadth of the country, and the progressive attitude of the National Farmers' Union in all animal health measures will be commented on later this evening.

"We are honoured by the presence of Lord Amory, better known to most of us as Mr. Heathcoat-Amory, an ex-Minister of Agriculture who held the full confidence of the whole industry during difficult days. He was later Chancellor of the Exchequer, and still shows signs of his training in the latter office, having extracted from us a promise that his only obligation to-night would be to enjoy himself.

"Our guest of honour, the President of the Royal College—and your Chief Veterinary Officer—identified himself with tuberculosis eradication from his earliest days in the profession and has had the wonderful experience of not only seeing this vast scheme come to fruition but of playing an active part in it at all levels, finally leading the veterinary profession in its ultimate achievement.

"He has indentified himself, too, during that same period with veterinary education—as an examiner, as a contributor to our journals, adviser to our veterinary schools, as chairman of certain editorial boards and as member of Council and Officer of the Royal College. In all of these capacities he has played his part to the full in the tremendous advances of more recent years.

"He has become a world figure in international veterinary affairs, and in the various organisations striving—by the control of animal diseases—to ensure the maximum production of foods of animal origin for the teeming world population. The profession has the utmost confidence in him, and again through those we represent we congratulate him on the well-deserved honour conferred upon him, which happily his wife can share. We thank and congratulate her, too, for her part in his achievements and for her work for the profession generally, especially in the charitable sphere."

The Minister of Agriculture, the Rt. Hon. Christopher Soames, C.B.E., M.P., then rose to propose the toast to Sir John Ritchie. In the course of his speech the Minister said that it was only 25 years ago that only about 1 per cent. of the herds in this country were free of tuberculosis. Two thousand five hundred people died every year from it, let alone the enormous amount of serious illness, glandular tuberculosis and all the rest, that flowed from it. Now, mothers could give their children milk to drink without any fear. It was a tale of the success of co-operation as between farmers, the veterinary profession and the Government.

One of the more hidden benefits which the campaign had brought about was the closer relationship which existed to-day between many farmers, who formerly rarely sought veterinary advice, who were now in constant communication with the veterinary profession in their own interests, and who realised it to be in their own interests. This was valuable for the nation.

The Minister commended the great contributions made by Sir John Ritchie, both as Chief Veterinary Officer and as President of the Royal College and expressed the satisfaction it gave him to see Sir John honoured, and to propose the toast that evening.

Sir John, who received an ovation as he rose

to reply said, in the course of his speech:—

"I am most grateful for the very kind things which have been said tonight. Particularly do I appreciate the thought that allowed this gathering to be held at which the Royal College, in marking this notable achievement of the veterinary profession, has coupled my name with the work and has paid me the compliment of calling together so many people who shared in all sorts of ways in reaching the end of the task which was set as long ago as 1935. It was obviously impossible to entertain all those people who had a part in the work, for many of them are no longer with us, and others have retired from active service and there isn't a hall in London that would have held them. But obviously, I am speaking for a great number of people.

"The whole-time staff, represented here by so many colleagues from the length and breadth of Great Britain, has been stretched to breaking point often enough because of the routine work being so interrupted by the appearance of those diseases like foot-and-mouth disease and fowl pest, which must be given priority treatment. How can one possibly single out any of them for any sort of special mention when everyone has played his part so well. Perhaps it may not be invidious for me to name just two—a pair of names so often spoken of in association: Brennan and Hughes.

"The veterinary surgeon in private practice has done by far and away the most of the tuberculin testing. If it has not been done without reward, let it be remembered that the effort has been enormous and that sometimes (and frequently when whole-time staff was diverted to other duties) other work in the practice may have suffered to an extent. Not only have the practising veterinary surgeons had to do most of the testing in attested herds but theirs has been the task of bringing the herds forward to the stage when application could be made for attestation. I wonder in which other countries this could have been done as efficiently by the general body of the profession.

"Perhaps less than enough credit has been given to the farmers of Great Britain for the part they have played in eradication. Those of them who set up attested herds in the early days reaped benefits which must fairly go to pioneers, and often I feel sure the gains have been substantial, but sometimes the initial costs of eradication have been high, yet every single farmer in England, Scotland and Wales has eliminated the disease from his herd by one method or another.

"This Scheme has been very well supported by the farming community and, indeed, all of our work is well regarded by the general body of our farmers. I am very doubtful whether there is any other country where the farmers would support policies which at first sight are not in their interests—I refer, of course, not only to the TB eradication scheme but to the more radical methods which are operated against foot-and-mouth disease and fowl pest. In spite of what you sometimes read in the Press (and a little controversy may be a good thing) I am quite satisfied that farming opinion is fully in support of these policies. To a very large extent this is due to the excellent appreciation of the position by the Farmers' Unions and I must record how grateful we are for the active help we have had from the Unions. May I be bold enough to speak particularly of Mr. Salter Chalker, who is here with us to-night, who has for so long been Chairman of the Diseases of Animals Committee of the N.F.U.

"We shall have to continue with a reduced amount of well organised tuberculin testing for many years to come and we will have to raise the efficacy of the test by exercising every care in the application of whatever test is currently in use, by further experimental work to improve the test, by following up the discovery of reactors and tracing the source of infection so that reservoirs may be destroyed. For this we will want the continued co-operation of all those people who have contributed to the present happier position and we shall want the help of our medical colleagues as well. I came into the veterinary profession over 35 years ago. At that time of the persistent shouts from the medicos was that we must do something and do it quickly to deal with TB in cattle which was doing so much harm to the children—and they were so right. Now we've done our job. Unquestionably man is one of the potential reservoirs of bovine type disease from which cattle may acquire infection. So I fully expect, having entered the profession to the shouts of the medicos, to leave it shortly at a time when my colleagues are pressing their medical confrères to do what they can to protect our healthy cattle from the hazards of their human contacts.

"Not only is the public health now protected, a great weight of persistent loss has been lifted from agriculture and the way has been made clear for us to do more on the same lines; for clearly the organisation comprising—field, investigation and laboratory staffs, supported by well deployed part-time veterinarians, has proved what it can do. It can do much more and we are happy that you Mr. Minister have already announced fields in which the veterinary profession may be further utilised officially for the good of agriculture and the public health."

The list of guests was too extensive to be quoted in full, but in addition to those mentioned last week others of note who accepted invitations were:—

Professor Beveridge; Mr. A. G. Beynon (junior vice-President of the B.V.A.); Sir Thomas Dalling; Mr. T. C. Denholm (hon. secretary of the B.V.A.); Mr. J. A. Anderson (general secretary of the B.V.A.); Professor Formston; Dr. R. E. Glover; Mr. P. Harnett; Col. J. Hickman; Mr. S. L. Hignett (senior vice-President of the B.V.A.); Mr. J. M. Ingram; Miss J. O. Joshua; Professor Lovell, Professor Messervy; Dr. R. F. Montgomerie; Mr. W. G. R. Oates (Registrar, R.C.V.S.); Professor Pugh; Dr. P. S. Pugh; Mr. C. P. Quick; Dr. J. M. Ross, Mr. H. Sumner, Mr. A. Steele-Bodger; Mr. W. R. Trehane; Mr. W. M. F. Vane; Professor E. G. White; Mr. E. Wilkinson; Mr. A. J. Wright; and Professor J. G. Wright.

No account of this historic and exceptionally pleasant function would be complete without a tribute to those who compiled the menu and selected the wines. Happy indeed is the Royal College in having at call gourmets who comprehend, with such an elegant understanding, the silent poetry of the human stomach.

A NEW ANTHELMINTIC FOR SHEEP

A press conference was held in London on March 28th when the action of a new anthelmintic for use in sheep was described. It had been evolved during experiments to increase the efficiency of phenothiazine by fine grinding and purification, but was the result of adding minute doses of an organophosphorus compound which had the effect of potentiating the phenothiazine so that its effect remained equal in destroying stomach worms and was greatly enhanced against intestinal worms. Readers may remember that reference was made to the experimental work in a letter published in these columns on February 25th this year.

Field trials had been carried out among more than 14,000 sheep in flocks all over the country, and the success of the new compound phenothiazine/coroxon* was illustrated in Tables which showed a high efficiency against all the stomach and intestinal worms, particularly *Trichostrongylus* spp.

The principal speaker at the press conference, Mr. H. E. Harbour, M.A., M.R.C.V.S., added that the dosage rate for the new anthelmintic was so far inside the toxicological safety limit that three times the prescribed dosage had proved harmless. There was no risk to the shepherd or farmer administering the compound, nor were significant residues left in the flesh of the animal.

Having referred to the heavy losses sustained in sheep through parasitic worms, both in terms of mortality and lowered productivity, the speaker drew attention to trials which had established the superior weight gains in animals dosed with this new combination. The superiority over controls yielded, in some flocks, a profit of from 10 to 20 shillings per lamb.

Work was now proceeding on cattle and other animals but it was too soon to assess the value of the new compound on any species other than sheep.

A paper giving results of extended field trials, and commenting on them, has been received for publication in THE VETERINARY RECORD; other papers, we understand, are being offered to *Research in Veterinary Science*.

* "Coopex"; Messrs. Cooper Macdougall & Robertson Ltd.

DR. DAVID LUKE

Professor H. G. Lamont writes:—

The veterinary profession in Northern Ireland has suffered a grievous loss by the death of Dr. David Luke, Senior Principal Research Officer of the Veterinary Research Division of the Ministry of Agriculture for Northern Ireland.

The late Dr. Luke graduated B.Sc. with Honours in Zoology in Queen's University in 1934. He entered the Royal (Dick) Veterinary College in Edinburgh and graduated in 1938. The next 4 years of his life were spent in Uganda but owing to a serious attack of malaria he was invalided out of the veterinary service there and returned to Northern Ireland. He entered the service of the Ministry of Agriculture in 1944 where his outstanding abilities were quickly recognised.

Dr. Luke specialised in pig and poultry diseases and was a recognised authority. He contributed many papers on both these species to the scientific press. His services were much in demand as a lecturer, and several universities in Great Britain availed themselves of his services to give specialist lectures to final-year students in veterinary science. Dr. Luke was a lecturer on the staff of Queen's University in the Faculty of Agriculture. He held the degree of Doctor of Philosophy, conferred on him by the Queen's University of Belfast in 1953.

He was a past President of the North of Ireland Veterinary Association and had acted as examiner in the veterinary school in Dublin.

In 1960 he was awarded the Belfast Evening Telegraph Cup for his outstanding services to agriculture. In the same year he was awarded a Kellogg Scholarship and spent 6 months in the United States studying problems of particular interest to Northern Ireland. He was a keen supporter of the Civil Service Rugby Football Club and served on the selection committee.

David Luke, as he was known to his colleagues, was a much loved figure and his loss will be felt not only by his family circle but also by his colleagues in the Veterinary Research Division in the Ministry of Agriculture and throughout the farming community in Northern Ireland.

He was born in Larne in 1910, and is survived by his wife with whom much sympathy will be felt in her great loss.

THE REGISTER OF VETERINARY SURGEONS

Mr. John William Every Adams, B.V.SC.(PRETORIA), P.O. Box 2147, Salisbury, Southern Rhodesia, was admitted to membership of the Royal College and was registered in the Commonwealth List, on March 22nd, 1961.

NEW B.V.A./R.S.P.C.A. AGREEMENT

Members of the Association, especially those in small-animal practice, will learn with interest that a new agreement has been negotiated with the R.S.P.C.A. It came into force on April 1st and we hope to publish details at an early date.

CHANGES IN THE POISONOUS SUBSTANCES REGULATIONS

Four new chemicals—ethion, mecarbam, phenkapton, and "Thiodan"—have been added to the Regulations for the protection of workers who use poisonous substances in agriculture.

This means that farm workers handling these chemicals must now by law observe certain precautions. These include the wearing of protective clothing appropriate to the chemical being used and the operation being performed.

In addition, the stringency of the precautions required when handling the chemical azinphos-methyl (trade name "Gusathion") has been reduced in the light of fresh data which have shown the precautions previously required to be unnecessarily strict.

UNIVERSITY NEWS

Liverpool

DEGREE OF B.V.SC. SECOND EXAMINATION

PART I

Veterinary Anatomy (including Histology and Embryology).

Harper, F. D. W.

PART II

Physiology (including Biochemistry).

Bramley, P. S.; Counter, D. E.; Furnevall, Elizabeth A.; Na'isa, B. K.; and Wosu, L. O.

THIRD EXAMINATION

PART II

Veterinary Pathology (including Microbiology and Parasitology)

Bardgett, P. L.; Bradley, W. A.; Entwistle, M. P.; Fabry, A.; Gardner, W. B.; Gooderham, K. R.; Hall, Elizabeth; Hallows, B. J.; Hammonds, Patricia; Hardy, Elizabeth A.; Jones, R. T.; Jones, T. O.; Llewellyn, C. A.; Mohammed, I.; Moore, J. C.; Mudd, A. J.; Newcomb, R.; Pierrepoint, C. G.; Pulley, Norma M.; Rawson, B. C.; Riffkin, G. G.; Sopronfalvy, M. J.; Strong, M. G.; Taylor, J. K.; Waugh, I. R.; and Williams, H. G.

THIRD EXAMINATION

PART III

Animal Husbandry (including Genetics)

Aldridge, Margaret C.; Bardgett, P. L.; Bradley, W. A.; Entwistle, M. P.; Fabry, A.; Gardner, W. B.; Gooderham, K. R.; Hall, Elizabeth; Hallows, B. J.; Hammonds, Patricia; Hardy, Elizabeth A.; Hilton, D. W.; Jones, R. T.; Jones, T. O.; Llewellyn, C. A.; Mohammed, I.; Moore, J. C.; Mudd, A. J.; Newcomb, R.; Pierrepoint, C. G.; Pulley, Norma M.; Rawson, B. C.; Riffkin, G. G.; Rutherford, D.; Sopronfalvy, M. J.; Summers, D.; Waugh, I. R.; Williams, H. G.; and Williams, M. H.

PERSONAL

Mr. W. R. Trehane, chairman of the Milk Marketing Board of England and Wales, was elected President of the British Society of Animal Production at the annual meeting in March.

Marriage

COMBEN—RIGHETTI.—On Wednesday, April 5th, 1961, at St. Antoniuskirche, Egg/Zürich, Switzerland, Norman Comben, B.SC., M.R.C.V.S., of London, to Annemarie Righetti, of Klingnau/AG, Switzerland. Dr. Vet. Med. H. S. Kind, of Zürich, was best man, and among the guests was Dr. Vet. Med. Ursula Kanter, also of Zürich.

TINDALL—SOMMERVILLE.—At St. Andrews on Friday, March 24th, 1961, John Richard Tindall, son of Mr. and Mrs. C. Tindall, Bank House, Clitheroe, Lancs., to Patricia Anne Sommerville, daughter of Dr. and Mrs. T. Sommerville, 4 Hope Street, St. Andrews, Fife.

Births

MATHIESON.—On April 3rd, 1961, to Helen (*née* Elliot) wife of Ogilvie Mathieson, B.V.M.S., M.R.C.V.S., 7 Chantry Grove, Upper Poppleton, York, a daughter.

SHANNON.—To Julia, wife of David Shannon, B.SC., M.R.C.V.S., of Veterinary Dept., Box 46, P.O. Kisii, South Nyanza, Kenya, on March 25th, 1961, at Princess Elizabeth Hospital, Nairobi, a daughter, Alison.

COMING EVENTS

April

10th (Mon.). MID-WEST VETERINARY ASSOCIATION. Meeting in the Reception Room of the University of Bristol, 7.30 p.m.

11th to 13th (Tues. to Thurs.). ASSOCIATION OF VETERINARY TEACHERS AND RESEARCH WORKERS. Annual Conference in the Imperial Hotel, North Promenade, Blackpool, 9.30 a.m.

12th (Wed.). SUSSEX VETERINARY SOCIETY. Meeting at the Old Ship Hotel, Brighton, 2.30 p.m.

MIDLAND COUNTIES VETERINARY ASSOCIATION. Joint Meeting with the Staffs. and Derbys. Veterinary Club at the White Hart Hotel, Uttoxeter, 7.30 p.m.

13th (Thurs.). CENTRAL VETERINARY SOCIETY. "All Day" Meeting at the Royal Veterinary College, Camden Town, N.W.1, commencing 12.30 p.m.

14th (Fri.). YORKSHIRE VETERINARY SOCIETY. Annual Buffet Dance at the Parkway Hotel, Otley Road, Leeds, 8 p.m.

19th (Wed.). WARWICKSHIRE VETERINARY CLUB. Meeting in the Regent Hotel, Leamington Spa, 7.30 p.m.

20th to 23rd (Thurs. to Sun.). B.S.A.V.A. Congress at the Kensington Palace Hotel, de Vere Gardens, London, W.8.

21st (Fri.). NORTH OF IRELAND VETERINARY ASSOCIATION. Annual Dinner at the Grand Central Hotel, Belfast, 7 p.m.

28th (Fri.). LIVERPOOL UNIVERSITY VETERINARY SOCIETY. First Annual Dinner at Reece's Restaurant, 7.30 p.m. for 8 p.m.

29th (Sat.). ASSOCIATION OF STATE VETERINARY OFFICERS. Annual General Meeting in Kent Room, Caxton Hall, London, S.W.1, 4 p.m. Dinner at the Criterion, Piccadilly, 6.30 p.m.

May

3rd (Wed.). SOUTH EASTERN VETERINARY ASSOCIATION. Meeting at Wye College, Wye, Kent, 2.30 p.m.

September

3rd to 9th (Sun. to Sat.). 79th Annual Congress of the British Veterinary Association at Oxford.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Angus. Pigpointie Farm, Auchterhouse, Dundee (Mar. 24).
Devon. Aylescott, Burrington, Umberleigh (Mar. 29).
Midlothian. Sheep Folds, Halfakiln, Tynehead (Mar. 27).
Orkney. Scuan, Harray (Mar. 28).

Foot-and-Mouth Disease

Devon. Dartmoor, Winkleigh (Mar. 28); Riddington Farm, Winkleigh; Collacott Farm, Winkleigh (Apr. 1).

Salop. The Rhewl Field, St. Martins Road, Whittington, Oswestry (Mar. 28).

Fowl Pest

Beds. Albion House, Albion Street, Pitstone (Mar. 30).

Essex. 36, Jubilee Avenue, Broomfield, Chelmsford (Mar. 30).

Glos. The Bungalow, Ledbury Crescent, Ledbury Road, Staunton; Hardwick Villa, Staunton Cross (Mar. 24); Fullbrook, Ledbury Road, Staunton (Mar. 27); 1, Council Houses, Moat Lane, Staunton (Mar. 28); Moat Farm, Moat Lane, Staunton; Ash Lane, Down Hatherley (Mar. 30); Hatherley Court, Down Hatherley; Brook Farm, Princes Crescent, Staunton (Mar. 31); Elmston, Staunton; The Cottage, Malvern Road, Staunton (Apr. 1).

Lancs. Brickholes Lane, Higher Wheelton, Chorley (Mar. 28).

Lincs. Home Bottom Farm, Witham-on-the-Hill, Bourne (Mar. 24).

Norfolk. North View Farm, Mattishall, Dereham (Mar. 24); 2, Clint Green, Yaxham, Dereham (Mar. 25); Coston Hall Barnham Broom, Wymondham (Mar. 27); Avenue Farm Cottages, Yaxham Road, Dereham (Mar. 30); Windyridge, Barford, Norwich (Apr. 2).

Northants. Barbers Orchard, Chapel Street, Stanground, Peterborough (Mar. 30).

Suffolk. 17, Mildenhall Road, Bury St. Edmunds (Mar. 27); 15, Norman Road, Bury St. Edmunds (Mar. 29); Barton Gates, Rougham, Bury St. Edmunds (Apr. 3).

Surrey. Hayleys Field, Lesley Road, Chobham (Mar. 29); Noggarth Poultry Farm, Chobham, Woking; Updown Dyke, Shrubbs Hill, Chobham, Woking; Idle Hill, Shrubbs Hill, Chobham, Woking (Mar. 30); Coombe Cottage, Burrow Hill, Chobham, Woking; Brimshott Farm, Chobham, Sandcroft, Windsor Road, Chobham, Woking (Mar. 31); 20, Holyoak Avenue, Horsell, Woking; Dingley Dell Nursery, Windlesham Road, Chobham, Woking (Apr. 1).

Worcs. Perrycroft Lodge, Jubilee Drive, Colwall Green, Malvern (Mar. 25).

Swine Fever

Bucks. The Piggery, off Common Road, Colnbrook, Slough (Mar. 29).

Ches. Hatherton Lodge Farm, Hatherton, Nantwich (Mar. 29).

Denbigh. Tatham Farm, Ruabon, Wrexham (Mar. 28); Hollybush, Bangor-on-Dee, Wrexham (Mar. 29).

Dorset. Brookway Farm, Sutton Waldron, Shaftesbury (Mar. 27).

Durham. Station Holding, Haswell (Apr. 1).

Hants. 18, Bull Farm, Hookpit, Kings Worthy, Winchester (Mar. 29).

Kent. Barden Mill Farm and Scriventon Farm, Speldhurst (Mar. 24).

Lancs. Croftlands Farm, Pilling, Preston (Mar. 27); Berry House Farm, Martin Mere, Scarisbrick, Ormskirk (Mar. 28); 25, Wolstenholme Fold Farm, Norden, Rochdale (Mar. 30).

Lincs. Filling Station, Caistor Road, Osgodby (Mar. 24).

Salop. Apley Home Farm, Wellington (Mar. 28).

Staffs. Parkside Farm, Gayton, Stafford (Mar. 24).

Suffolk. Marks Farm, Stradishall, Newmarket (Mar. 24); Low Farm, Worlingworth; The Nurseries, Hartest, Bury St. Edmunds (Mar. 28); Darsham Farm, Wetherden, Stowmarket (Apr. 1).

Surrey. Turtles Farm, Alfold, Cranleigh (Mar. 28).

Sussex. The Birches Piggery, Imberhorne Lane, Felbridge, East Grinstead (Apr. 1).

Wilts. Eastrip Farm, Colerne, Chippenham (Mar. 27).

Worcs. Cooksey Green Farm, Upton Warren, Bromsgrove (Mar. 30).

Yorks. Westcott Poultry Farm, Aughton Road, Swallow Nest, Sheffield; Corner Farm, Sherburn, Malton; Rosecroft, Kirklevington, Yarm-on-Tees (Mar. 24); Park House, Hunmanby, Filey; Newfield Hall Farm, 636, Gleadless Road, Sheffield 2 (Mar. 27); Manor Farm, Upper Haugh, Rawmarsh, Rotherham; Movade, Hackforth Road, Catterick, Richmond (Mar. 28); Birks Green Farm, Fulwood, Sheffield 10 (Mar. 29); Manor Farm, Sherburn, Malton; Warley Cross, Brandesburton, Driffield (Mar. 30); Low Skirlington, Skipsea, Driffield (Apr. 1).

Letters to the Editor

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

The Future of the Profession

Sir,—The subject of education is always intriguing, though the demands of some curriculums tend to suggest that the designation "edification" might be more appropriate. No matter how brilliant the teacher or excellent the facilities, the final stage of evolution rests with the recipient. The human brain has a limit to storage, and it would be easier, if it were possible to differentiate between knowledge and memory. It has been stated that "it is not what one does not know which makes him look a fool: but what he should know, but doesn't." The old system of apprenticeship before registration for studies, and the employment of bona fide final-year students had much to commend it and could be reconsidered.

The private practitioner has always lacked facilities to assist him in diagnosis, and on more than one occasion your correspondent has suggested the possibility of enlarging and utilising the various Divisional Veterinary Laboratories for this purpose. This in the long run would pay better dividends to all concerned than any mad-cat scheme of nationalisation, with the inevitable menace of lay control of our profession, the loss of individualism, and a state of affairs where so many will benefit the few.

The future of our colleagues in tropical countries has got to be safeguarded, and their knowledge and experience preserved and utilised for those destined to follow. In time we may have a "Ross Institute" of our own, but in the meantime a place can and must be found for them to continue with their activities, as wherever located their advice will be needed for a very long time to come.

Yours faithfully,
J. F. D. TUTT.

"Rothiemurchus,"
St. Cross,
Winchester.
March 30th, 1961.

Sir,—It is indeed heartening for younger members engaged in agricultural practice to find that someone of authority is aware of the problems facing this branch of the profession. I refer to Professor J. G. Wright's wise words on the future of the veterinary profession.

Too many people seem to think that we are just

going to go on blissfully living from ministry scheme to ministry scheme, or that "something will turn up"; this, to say the least, is a somewhat negative outlook, and will be no solution to the possibly serious situation that will arise in the near future.

One assumes that with the present system a saturation point *vis-à-vis* veterinary surgeons and work available will be reached and passed. This could, among other things, result in a fee cutting and canvassing spree that would make a soap company's "4d. off" campaign look like an old folk's outing!

I suggest that the future of agricultural practice is a subject to which the B.V.A. could well devote some *active* attention. Amongst other things the Association would receive from the younger half of the profession the support and confidence which it conspicuously lacks at present.

Yours faithfully,
D. FENWICK JONES.

c/o Ponthafren Surgery,
Newtown, Mont.
March 21st, 1961.

Sir,—I am amazed to see the ugly head of nationalisation attempting to rear—if only in a feeble and half-hearted effort. We should destroy this evil thing once and for all. One would have thought that the lesson of nationalisation had been learned by all, with the exception of woolly-headed left wingers. It is seriously to be hoped that such persons do not exist within our own profession. Our sister profession was sold out by politicians, and by the faint hearted within: we can surely be firmer and stronger and cut out the cancer before it grows further.

Few of us in practice would have the temerity to tell Professor Wright how to teach surgery. We have neither his knowledge nor experience of this highly important branch of our profession. Similarly, I as a veterinary surgeon in practice strongly resent being told how we should go about our business; especially when the advice comes from one with neither knowledge nor experience of practice.

I presume Professor Wright will stand again as a candidate for election to the Council of the R.C.V.S.? Will he then, in an electioneering preview, once more expound his views on nationalisation?

Yours faithfully,
ROBERT S. TOWNSON.

123, King Street,
Maidenhead,
Berks.
March 29th, 1961.

Sir,—Poor Mr. J. S. Smith, it is with sorrow that I read of his student boredom.

A student's life may sometimes be tedious but should never be boring. Most people find that there are not enough hours in the day to do all the things they want to do. In Professor Wright's contribution to the symposium "The Veterinary Profession, Past, Present and Future," it is not suggested that a "nationalised" service should embrace the whole of the veterinary profession; he has, in fact, selected agricultural practice as a basis for proposals.

It is suggested that the veterinary profession itself should devise and promote a service that is generally acceptable. Nor does Professor Wright suggest that the profession is to be governed by a few officials, he suggests that there should be decentralisation and that the "front line" of the service should be the local clinicians—which surely means the Mr. Smiths of the profession.

In my experience, few practices have the time or facilities completely to investigate their patients, nor is it reasonable to expect any one veterinary surgeon to be able to cover such a wide field.

A 40-hour week does not mean, and never will mean, an inflexible space of time. It means that given the opportunity and the co-operation of an educated public one should have time to come to grips with the problems—in modern parlance, "think time."

Veterinary surgery in general practice, appears to be becoming more and more empirical, and what with lack of time and an abundance of antibiotics it is just too easy to "play it off the cuff" and rush on to the next case. One must have time and facilities properly to investigate the patient's condition and here the assistance of regional laboratory and hospital facilities would be invaluable. There would also be the added advantage of a ready supply of research material, much of which is now lost in the scramble of general practice.

Finally, I would add that time and energy left to indulge in outside activities and to broaden one's horizon are essential if one is to remain a balanced person able to contribute to, and take one's place as, a responsible member of the profession and of the community in general.

Yours faithfully,
JOYCE GRANT WRIGHT.

114 Maida Vale,
London, W.9.
March 27th, 1961.

The Future of Animal Husbandry in Overseas Territories

Sir,—Mr. G. H. Yeoman's excellent letter brings forward a subject of the greatest importance to the future of veterinary medicine in the tropics. The fund of knowledge held by Colonial and ex-Colonial Service Officers is rapidly running to waste but we already have the nucleus of an Institute of Tropical Veterinary Medicine at Edinburgh where the D.T.V.M. course is run.

With all the present talk of help for the underdeveloped countries one assumes that the Government would encourage the work done at Edinburgh to expand. I understand, however, that the minute colonial office subsidy paid in the past was recently withdrawn and only restored in part after the most vigorous representations had been made. A niggardly £2,000 a year is apparently all that can now be spared by this rich country to run the only postgraduate tropical veterinary medicine course in the world.

The D.T.V.M. course brings together veterinarians from all over the tropics, and the mere interchange of opinions and experiences alone is of tremendous value quite apart from the knowledge imparted during the course. The staff at the "Dick" have built up a considerable background knowledge of work in the tropics and even as a mere clearing house of information the College must already be worth tens of thousands to the Commonwealth.

The B.V.A. should press as vigorously as possible for the expansion of the work done at Edinburgh and for the adoption of Mr. Yeoman's proposals.

Yours faithfully,
W. J. HERBERT.

13, Erleigh Road,
Reading,
Berks.
March 26th, 1961.

Treatment of Ear Conditions

Sir,—Having seen my letter in your journal of March 4th, the manufacturers of "Ceruvet" have drawn my attention to the fact that since my previous letter of February 14th, 1959, the formula of this substance has been improved. In my letter I omitted to mention that my recent trials were with this latter formula, and I have found that it did not cause any discomfort or pain such as was observed in some cases in the previous series reported on in 1959.

Yours faithfully,
Wm. J. JORDAN.

Green Paddocks,
Pulford,
Nr. Chester.
March 27th, 1961.

An Unexplained Condition of Pregnant Ewes

Sir,—We have encountered on one or two occasions the condition referred to by Mr. J. B. White. By a strange coincidence on the day we read his letter a farmer reported quite an outbreak of it stating that he had had 6 cases. The condition we have seen is a prolapsed vagina with a tear in the vaginal wall through which the intestines have protruded. It has invariably been fatal. The only explanation which occurs to us is that it results from heavy straining on the part of the ewe. The farmer we mention thought that crows might have attacked the prolapsed vagina.

In connexion with lambing accidents we are impressed by the ease with which a ewe seems to be able to rupture her uterus as evidenced by 2 cases seen recently. In one the ewe had died suddenly the day following a normal lambing. On *post-mortem* examination the afterbirth was found in the abdominal cavity and there was a 3-inch rupture in the uterus. Peritonitis was well marked. In another case a caesarean operation was being performed and 2 lambs had been delivered through the uterine incision when the afterbirth was noticed exuding from another opening.

On further examination yet another opening was discovered which was big enough to permit the delivery of a third lamb. All 3 openings were sutured and the ewe made an uneventful, if not somewhat miraculous, recovery.

Yours faithfully,
J. R. B. DAWSON,
J. H. McGHEE.

46, Coten End,
Warwick.
March 28th, 1961.

Sir,—The fatal condition in pregnant ewes described by Mr. White has been seen in this practice.

Three years ago, in a flock of 150 Border Leicester ewes, there were 8 fatal cases on separate occasions during a period of about 4 weeks. In each case the vaginal tear had the appearance of an incised wound and there was protrusion of the intestines. Two further cases were then met, on 2 widely separated farms, again in ewes of similar breed, age, and stage of pregnancy.

This year the condition has, in this district, been much more frequently met with.

A farmer who annually lambs about 100 inland ewes told me to-day that in the last 14 years he has, during that time, lost 2 ewes from this cause, but that this year he has lost 3 in the season.

I have enquired from 2 local knackers regarding these cases. Each said that out of an annual spring-time collection of about 200 to 300 sheep they expected usually between 6 and 12 cases. Each said that this year it was very common. The first said he had had more than 50 cases. The other, who works an area with a heavier sheep population, said he was getting about 30 sheep a week and more than half of them had this condition. He had seen more than 60 cases. One owner with about 200 sheep had lost 10 from this cause.

Nearly all these sheep were reported in good condition. All ages were represented, from shearlings, but it was seen more commonly in older sheep. One knacker did not open his sheep, but the one who did said that most of them had 3 lambs in them, and he could not recall having seen a case with only a single lamb.

In this district, the lamb crop is the heaviest for many years, and it would appear that super fecundation plays a part in the cause of this condition.

Yours faithfully,
D. V. SINCLAIR.

Southwoods Hall,
Thirsk,
Yorks.
April 2nd, 1961.

Sir,—I would like to make a few comments on this condition of "rupture of the vagina" described by Mr. White in his letters of March 18th and April 1st.

I have seen a few cases during several years since 1953. They have occurred in many breeds or crosses—Dorset Horn, Half-bred, Suffolk Half-bred of Welsh origin and Suffolk Half-bred of Scottish origin. I have distinguished the Suffolk Half-breds

because the former is a small ewe and the latter a very large one. Undoubtedly other breeds may be affected, but the above were those affected on the university farms during this period. We have had Clun Forest ewes too for a few years but I cannot recall one case in this breed. On all occasions the mishap occurred during the last few weeks of pregnancy, and without any warning. I can understand the prolapsed vagina eventually rupturing, if neglected, but in these cases there was no previous prolapse. In most cases the ewes were being fed kale, hay and concentrates, but in a few kale was not included. Generally the ewes have been found dead with the small intestine prolapsed and a tear in the vagina; in a few cases they have been seen alive but died shortly afterwards, usually whilst I have been wondering how I could possibly replace the intestines in their dilated and congested state.

The interesting point about this condition concerns the possible explanation. I would venture to suggest that it may be a more serious alternative to prolapse of the vagina. Bassett (1956) makes out a reasonable case for the development of vaginal prolapse. A multiparous ewe pregnant with large twins, has reached a late stage in gestation. During the course of pregnancy her pelvic tissues have relaxed to a greater degree than have those of many of the ewes in the same flock. She distends her rumen with bulky or gas-producing feed. She then lies down for a period and her vagina is temporarily everted. If she lies long enough, or often enough, eversion of the whole organ occurs. In other words, compensation for increased intra-abdominal pressure is made at the point of least resistance—the pelvic region. I would suggest that this build up in pressure may be so great in some cases as to cause rupture of the vagina and not prolapse, especially if the ewe happens to be one whose pelvic tissues have not relaxed.

Yours faithfully,
P. S. BRIDGE.

Department of Veterinary Clinical Studies,
School of Veterinary Medicine,
Madingley Road,
Cambridge.

April 3rd, 1961.

References

BASSETT, E. G. (1956). "III International Congress on Animal Reproduction." Section II. 39.

Sir,—I have read with interest Mr. White's letter on an unexplained condition in pregnant ewes. This condition was first reported by this Department in the Annual Report of the Edinburgh College of Agriculture, in 1952, in which year a large number of outbreaks were seen in South-east Scotland.

Questioning of the shepherds showed that the condition had been known for at least 50 years. Since then we have encountered the condition on several occasions. Invariably a high incidence has been associated with a mild and open winter. The ewes affected are usually older animals of the large breeds. The condition has not been seen in Blackfaces or in Cheviots. The common breeds in this area, of course, are the Leicester and Half-bred and these are the breeds in which the condition has been seen.

Cases examined *post mortem* have shown in nearly every instance that the animal was carrying twins or triplets, and that the weighty uterus had drawn the vagina tightly against the floor of the pelvis; so tightly indeed that it was difficult to get a finger between the pelvic floor and the vaginal wall. The tear of the vagina has been usually dorsal or dorso-lateral and the protrusion of the intestines associated with profuse haemorrhage.

This year, as was to be expected, the incidence has been particularly heavy and enquiries have been made into the feeding and management in some 14 outbreaks. In 2 of these no turnips or other bulky food was being fed.

We have not seen the condition associated with vaginal prolapse.

Yours faithfully,
J. A. WATT.

The Edinburgh School of Agriculture,
West Mains Road,
Edinburgh, 9.

March 31st, 1961.

Sir,—Mr. J. B. White's interesting letter of March 10th describes a condition that has been recognised in the Norwich and Cambridge Veterinary Investigation Centres for several years. During the winter of 1958/59 particularly, we received reports of its occurrence in a number of flocks widely distributed throughout Norfolk and East Suffolk—the area served by this laboratory.

One outbreak that we investigated occurred in a flock of 400 Border Leicester × Cheviot ewes on "upland" grazing in North Norfolk. Between mid-February and the first week of March, 10 of these ewes died as a result of herniation of the intestine through a rupture of the vaginal wall.

One of the affected ewes was seen by the shepherd to collapse and die "as if shot." All the others were found dead.

There had been 6 cases of vaginal prolapse in the flock that winter but all had responded to treatment and none was subsequently affected with the condition under discussion. There were no cases of uterine prolapse.

Post-mortem examinations were made on 3 ewes from this outbreak, and 2 from other flocks. All were heavily in lamb and in good bodily condition. One was carrying triplets and the other twins. Three of the 5 ewes showed a longitudinal rupture, 10 to 15 cm. long, in the dorsal wall of the vagina. One showed a similar rupture of the ventral wall, and the fifth showed two ruptures, in the dorsal and right lateral walls.

Varying lengths of both small and large intestine had herniated through the ruptures. In some they had become strangulated and engorged with blood. Others showed evidence of severe trauma, apparently from "treading." Three ewes showed evidence of intra-abdominal haemorrhage, and 2 showed a localised sero-fibrinous peritonitis in the pelvic region. Bacteriological examinations disclosed no significant bacterial infection.

As far as I am aware, the aetiology of the con-

dition is still unknown, although our own limited data suggest that multiple pregnancy may be a predisposing factor. In the outbreak described above there was a history of the flock having been moved 3 miles over crusted snow 5 weeks before the occurrence of the first case, and it would be most interesting to know whether other outbreaks have followed similar events that could be thought of as having "jolted" the pregnant ewes.

I would like to acknowledge the help of Mr. H. C. Swann, M.R.C.V.S., of King's Lynn, with whom the outbreak described above was investigated.

Yours faithfully,
A. H. HARRIS.

Veterinary Investigation Centre,
Mile Cross Lane,
Norwich,
Norfolk,
42N.
March 29th, 1961.

Reference

WHITE, J. B. (1961). *Vet. Rec.* **73**, 281.

"Town Vet"

Sir,—I watched the television programme on Thursday evening, March 30th, headed "Town Vet." I do not yet know what the majority of veterinary surgeons thought of this documentary, but I personally thought it was shocking.

I fully expected to see someone, well thought of, in the profession, doing a condensed version of a day's work, with a normal cross-section of people that would come to a surgery in an average residential district.

Instead, an actress was employed who depicted one of the most bizarre characters I have ever come across; as a veterinary surgeon she was shown as being unpleasing (except at odd intervals), frumpish, egotistical, and with a great chip on her shoulder.

When a new client asked her if there was anything to pay, she blew up in a most vicious and unprofessional manner, and gave a real lecture together with free publicity for an animal welfare society. Surely the client could have been told quite pleasantly that naturally there was a fee; could have been reassured that it would be within her means, and this golden opportunity could have been taken to explain to the client (and to all those watching television) that the "clinics" are intended only for old age pensioners, disabled people and other genuine cases.

The specific fee of £3 3s. for inoculation should not have been mentioned, because people will mistakenly think that that is the fee for distemper inoculation, and I could visualise numerous enquiries from the public, as a result of that quoted fee.

If an actress had to be employed for this type of programme, why not one with (to me at least) a more pleasant personality?

Yours faithfully,
C. STEELE.

65, Seaview Road,
Wallasey,
Cheshire.
April 2nd, 1961.

Effeminator Springs and the Spaying of Cows

Sir,—The letter on the use of effeminator springs in cattle by Mr. J. F. D. Tutt in THE VETERINARY RECORD of January 28th, which has just arrived here, prompts me to write the following.

In general practice among the European-owned dairy herds in the Highlands of Kenya my partner and I gave these cervical springs a thorough trial and, although they appeared reasonably satisfactory in preventing conception within the Bail herds, we found that spaying the cull-cows *per vaginam* a far better method of control, for the reasons given below.

Cows in which springs had been used continued to return to the bull regularly, which not only prevented them gaining weight, but also prevented the farmer from conserving his expensive, imported sires; they were still subject to infectious sterility diseases such as vibrio and "Epivag," (a sterility disease so far unknown outside Africa) and thereby a potential menace to the bull. Neither could they be run with the steers, nor even away from the bull because of the ensuing damage to the fences.

Spaying the animals overcame all these objections in one operation. The cost to the farmer was a little higher, but operating *per vaginam* we found that, all things being equal, we could cope with about 6 head per hour and the increase in weight gains more than compensated. We also found that when done at the peak of lactation, say 6 weeks *post-partum*, the animals could often be milked out for a year or more whilst gaining considerable weight. The only risk attached to the operation, which is done in the standing position under epidural anaesthesia, is the possibility of peritonitis resulting from an infected vagina. This risk is no greater than that of the ascending metritis possible by the effeminator spring method.

Yours faithfully,
C. R. HOLMES.

Whangarei-Maungatapere Dairy Veterinary Service,
Whangarei,
New Zealand.
March 28th, 1961.

"Your Life in Their Hands"

Sir,—During a recent programme of "Your life in their hands" on B.B.C. television, it was suggested that aspirin is a potentially dangerous drug, in that it may in some cases lead to degrees of gastric haemorrhage.

A few days after this programme I had some difficulty in persuading a client that an aspirin given morning and evening would be beneficial treatment for her dog, which was suffering from an arthritic condition.

"But what about gastric haemorrhage?" asked the client.

It appears that not only are our lives in their hands.

Yours faithfully,
A. G. McFARLAND.

12 Glapthorn Road,
Oundle,
Northants.
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